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Review of 1,000 Home Accidents

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THERE is little need to stress the importance of accidents as a cause of death in Canada. Accidents are now the fourth leading cause of death when all ages are considered and are the leading cause of death in all ages between 2 and 39 years. While more attention has recently been focused on motor vehicle accidents, accidents occurring in the home contribute a substantial share of this wastage. In 1954, 8,372 Canadians of all ages died from accidental causes. Of this total, 2,128 or 25% died as a result of accidents in the home. This proportion is considerably higher in certain age-groups. In children under 5 years of age and in elderly people of 70 years and over, 58% and 48%, respectively, of all accidental deaths at these ages occurred as a result of accidents in the home. An analysis of home accident deaths by age also indicates the extent of the problem in the very young and the very old. Thirty-two per cent of all home accidental deaths occurred in children under 5 years of age, while 36% were in persons 70 years of age and over.

Although the death toll from accidental causes is so well known, facts concerning non-fatal injuries resulting from accidental causes are still fragmentary. Accidental injuries are not reportable, but special studies have indicated the probable frequency of non-fatal accidental injuries. The evidence seems to be that in the case of home accidents, as many as 150 injuries resulting in disability for a period of 24 hours or more, and four injuries resulting in permanent disability, may occur for every accidental death. The number of less serious injuries resulting in disability of less than one day, is much greater, probably four to five such injuries for every injury resulting in 24 hours disability. Whatever the exact total of accidental injuries may be, they constitute a sizable proportion of all admissions to hospital.

It is increasingly recognized that this mounting toll of accidental death and disability is a public health problem—a challenge to preventive medicine. It has been said many times that accidents do not just happen. According to the

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principles of ecology, all living things depend for their survival and well-being on a satisfactory balance with their environment. Human disease may be considered to be the outcome of an ecologic balance unfavourable to man. Similarly, many complex and interacting human and environmental factors determine the occurrence of accidents in any situation. Environmental hazards such as faulty design and construction of houses, inadequate repairs and maintenance, and careless and haphazard housekeeping all contribute their share to home accidents. Important too are such human failings as carelessness, preoccupation and impulsiveness. As in the study of communicable and other diseases, epidemiology offers a systematic method of unravelling the complexities surrounding accident causation, of studying the interrelationship of attributes of the host, agent and environment, and of fitting each into its proper perspective in the total accident picture.

With something of this in mind and in an attempt to learn more of methods which might be helpful in the investigation of accidental injuries, the study of a series of home accidents was undertaken. With the active co-operation of four hospitals (1) in the Ottawa-Hull area, an arrangement was made whereby notification was given by means of a simple postcard whenever a patient sought treatment at the out-patient department of these hospitals, for injuries resulting from an accident in the home. (A "home" for the purpose of this study was defined as a single or multiple dwelling and its premises.) On receipt of this notification a visit was made to the home where the accident occurred and the injured person interviewed, or in circumstances where this was not possible, as, for example, when a child was injured, enquiries were made from the mother or other suitable member of the family. During the period July 4 to December 19, 1955, 1,868 such notifications were received from these hospitals and were investigated consecutively as soon as possible after receipt. Substitutions were made in rotation for persons untraceable, unco-operative or living outside the area, until the objective of 1,000 home accident investigations had been completed.

The type of accident, for example, falls, burns, cutting and piercing accidents was determined, and the nature of the injury resulting from the accident was ascertained. The time of occurrence of the accident was determined in relation to the hour, and day of week. An investigation was made of environmental factors, the location within the home where the accident occurred, the activity of the person at the time of accident, and the part that the acts or omissions of other persons contributed to the causation of the accident. Other environmental factors such as income, type of housing and family history were noted. The characteristics of the persons suffering the accidents, such as age, sex, marital status, and occupation were investigated. A history of previous accidents was obtained and the presence of certain physical defects, associated with the causation of the accident, as paralysis and defective eyesight and hearing were noted. An attempt was made to assess the personal attributes of the injured persons, as impulsiveness, carelessness, and the lack of concentration and reponsibility in adults when these appeared to have contributed to causing the accident. Similarly in children, disrespect of authority and the effects of lax supervision were noted. An investigation was also made of the agent concerned in accidents of various types.

It should be borne in mind that since the only accidents included in this series were those for which the injured person sought medical aid at one of the four Ottawa and Hull hospitals, this series may not be representative of all home accidents. The conclusions drawn in this study are, therefore, only in relation to the 1,000 accidents investigated. Many of these conclusions are matters of interpretation and opinion, but an attempt has been made to ensure as far as possible that interpretations were consistent throughout.

The Accident

By Type:

It will be seen from the distribution of the 1,000 accidents investigated that cutting and piercing accidents and falls from one level to another each contributed about one-quarter of the total (Table I). All falls made up some 40%

TABLE I
1,000 Accidents by Type of Accident

Type of Accident	Number	% of Total
Cutting and piercing	246	24.6
Falls from one level to another	258	25.8
Falls on same level	151	15.1
Blow	105	10.5
Burns	52	5.2
Poisoning	25	2.5
Foreign body entering body orifice	36	3.6
Accidents caused by animals or insects	18	1.8
Other	109	10.9
TOTAL	1,000	100.0

of the accidents investigated. Burns contributed a little over 5% and poisonings 2.5% of all accidents. The other sizable group, blows, represents accidents which were caused by moving objects striking the body of the injured person. The group, foreign body entering body orifice, includes the accidents caused by many varieties of substances entering the eye, nose, ears, etc. Accidents caused by animals or insects usually resulted in bites and scratches.

By Day of Week:

When the day of the week on which the accident occurred is noted (Table II) it will be seen that as might be expected, more accidents occurred on Sundays and Saturdays than on any week-day. The same observation holds for each type of accident except it will be noticed that Saturday's incidence of cutting and piercing injuries is relatively low. The miscellaneous group "other

TABLE II
1,000 Accidents by Day of Week of Occurrence

Type of Accident	Sun.	Mon.	Tues.	Wed.	Thur.	Fri.	Sat.	Unstated	Total
All falls	66	59	51	51	63	53	66	–	409
All cutting and piercing	43	35	27	36	42	32	31	–	246
All burns	11	7	3	4	9	7	11	–	52
Other	49	50	38	38	37	32	47	2	293
All Accidents	169	151	119	129	151	124	155	2	1,000

accidents" was most frequent on Monday and on the week-end. This clustering of accidents on the week-ends can probably be explained by exposure, more members of the family then being present in the home for longer periods than on other days of the week.

By Time of Day:

When examining accidents in relation to the time of occurrence (Table III) it will be observed that all accidents and each type of accident were most

TABLE III

1,000 Accidents by Time of Occurrence

Type of Accident	7-10 a.m.	10 a.m. -1 p.m.	1-4 p.m.	4-7 p.m.	7 p.m.- 12 a.m.	12 a.m. -7 a.m.	Not Stated	Total
All falls	53	82	71	90	84	20	9	409
All cutting and piercing	16	62	46	70	43	3	6	246
All burns	8	13	5	14	8	3	1	52
Other	27	66	64	68	55	7	6	293
All Accidents	104	223	186	242	190	33	22	1,000

frequent during the period 4:00–7:00 p.m. and consistently next in frequency during the period 10:00 a.m.–1:00 p.m. Almost half of all accidents investigated occurred during these two three-hour periods of greatest household activity. The association of cutting and piercing accidents (54%) and burns (52%) which coincide with the preparation and cooking of food at these times is particularly evident. The comparatively small number of cutting and piercing accidents and burns which occurred during the period when breakfasts are being prepared is striking.

Accidents in Relation to People

All Accidents by Age and Sex:

From the distribution of all accidents by age and sex (Table IV) it will be seen that approximately 40% of all persons suffering accidents in this series were aged 5 years or younger, while 60% were under 17 years of age. Accidents were distributed evenly between the sexes under 1 year of age, a heavy predominance of boys is evident between the ages of 1–16 years, while accidents in adults were more frequent in women. Of the males who suffered accidents, 68% were 16 years or younger, while only 52% of the females were in these ages. Only 2% of the males and 4% of the females were 70 years and over.

TABLE IV

1,000 Accidents by Age and Sex

Age Group	Male	Female	Total
Under 1 year	8	8	16
1 — 5 years	237	139	376
6 — 16 years	118	96	214
17 — 69 years	163	201	364
70 and over	10	19	29
Unstated	—	1	1
Total	536	464	1,000

Marital Status and Occupation:

Of all persons 16 years and over who suffered accidents, 280 out of 399 were married.

The occupations of persons suffering accidents, by main occupational groups, were recorded. The largest single group was pre-school children (38%) followed by students (21%). Of the adults, housewives comprised the largest single group (14% of all accidents and 35% of all adults). Other groups of substantial size were typists and clerks, craftsmen, labourers and retired people.

All Accidents by Type, Age and Sex:

Contrary to what might have been expected, more males than females suffered cutting and piercing injuries (Table V). In only one age-group (17–59 years), which would include the majority of housewives, was the

TABLE V

1,000 Accidents by Type, Age and Sex

Type of Accident	Under 1 Year	1-5 Years			6-16 Years			17-59 Years			60 years and over			All Ages		Total
		M	F	Total	M	F	Total	M	F	Total	M	F	Total	M	F	
Cutting and Piercing	1	28	11	39	39	18	57	64	71	135	10	4	14	142	104	246
Fall from one level to another	4	74	53	127	29	23	52	17	35	52	7	16	23	129	129	258
Fall on same level	1	37	23	60	16	22	38	18	20	38	6	8	14	78	73	151
Burns	3	12	6	18	2	2	4	10	16	26		1	1	25	27	52
Poisoning	1	14	8	22				1	1	2				15	10	25
Blow	4	31	13	44	17	12	29	10	12	22	2	4	6	62	43	105
Foreign body entering body orifice	1	9	10	19	2	5	7	5	4	9				16	20	36
Accidents caused by animals and insects		4	1	5	4	3	7	3	3	6				11	7	18
Other	1	28	14	42	9	11	20	18	24	42	2	2	4	58	51	109
Total	16	237	139	376	118	96	214	146	186	332	27	35	62	536	464	1,000

proportion of females higher than males (52%). In age-groups 1–5 and 6–16 years, over twice as many boys suffered cutting and piercing accidents. Falls from one level to another were distributed equally between the two sexes. In age-groups 17–59 and 60 years and over, twice as many women suffered this type of accident, although in the younger ages the boys predominated. A similar picture is seen in falls on the same level, although the distribution between the two sexes at various ages is more even. More women suffered burns in ages 17–59, but the situation was reversed in ages 1–5 years. The association of poisoning with pre-school children was striking, 23 out of the total of 25 poisoning accidents occurring in children 5 years of age or younger.

History of Previous Accidents and Association of Certain Physical Defects with the Accident:

An enquiry was made concerning the history of previous accidents and the presence of certain physical defects which appeared to be associated with the accident under investigation. It was seen that 20% of persons in this series had suffered one previous accident, and an additional 6% had suffered more than one previous accident. Physical defects appear to play a relatively small part in accident causation since in only 2.5% of all accidents did a physical disability

appear to be significant. Defective eyesight was associated with 7 accidents, defective hearing with 1, paralysis or other disability with 3 and bad general health with 14 accidents.

Association of Certain Characteristics with Causation:

A preliminary analysis has been made to assess the part that certain personal characteristics played in the occurrence of the accidents. In the pre-school group it appears that the most dominant factor was lack of supervision and carelessness on the part of responsible persons. In over three-quarters of all accidents in pre-school ages, these characteristics on the part of some person played a part in causation. In the school age-group lack of a sense of responsibility and carelessness entered into the causation of more than half the accidents, and carelessness contributed to more than half of all adult accidents. Lack of concentration and impulsiveness appeared to play a more minor part in all ages as did bad upbringing and a disrespect for authority in the pre-school and school age groups. In a separate analysis of the 137 accidents where lack of concentration was a factor, it was found that haste "to get the job done" was responsible in half these accidents, or in some 7% of all accidents.

The Accident in Relation to the Agent

Cutting and Piercing Accidents:

It will be noted that the largest number of cutting and piercing accidents (Table VI) was caused by broken glass (25%). Knives and nails each contributed about 15% of this type of accident and tools and power tools, sharp edges of cans and other metal were responsible for substantial numbers. As previously noted, more males than females suffered this type of accident. Knives, cans and glass injured more females than males while nails, slivers and splinters, sharp metal, tools and power tools caused more male accidents.

TABLE VI

Cutting and Piercing Accidents by Age, Sex and Agent

Agent	Under 1 Year	1 — 5 Yrs.			6 — 16 Yrs.			17 +			All Ages		Total
		M	F	Total	M	F	Total	M	F	Total	M	F	
Glass		3	1	4	9	7	16	14	27	41	26	35	61
Knife		2	5	7	7	5	12	6	13	19	15	23	38
Nail		10	2	12	9	1	10	6	4	10	25	7	32
Tools		3		3	2		2	17		17	22		22
Power tools		1		1	2		2	9	1	10	12	1	13
Can		2	1	3	1		1	2	8	10	5	9	14
Sharp metal		1		1	3		3	6	2	8	10	2	12
Needle and pins									9	9		9	9
Sliver and splinter								6	2	8	6	2	8
Other	1	6	2	8	6	5	11	8	9	17	21	16	37
Total	1	28	11	39	39	18	57	74	75	149	142	104	246

Only one out of a total of 35 persons injured by tools and power tools was a female, which would seem to indicate that the trend "do it yourself" has not yet affected the ladies. The one woman injured by a power tool was a lady trying out the new power mower. Conversely, all those injured by needles

and pins were women. In relation to age it will be noted that in general this type of accident affected adults, as only 16% of these accidents occurred in children 5 years or younger. Nails caused one-third of all cutting and piercing accidents in this age-group, and were the single agent responsible for the highest proportion of cutting and piercing accidents in this age-group.

Falls from One Level to Another:

It will be seen (Table VII) that stairs were the single agent responsible for more falls from one level to another than any other. Falls from chairs,

TABLE VII

FALLS FROM ONE LEVEL TO ANOTHER BY AGE, SEX AND AGENT

Agent	Under 1 Year	1 — 5 Yrs.			6 — 16 Yrs.			17 +			All Ages		Total
		M	F	Total	M	F	Total	M	F	Total	M	F	
Stairs		22	20	42	3	7	10	12	33	45	37	60	97
Chairs		12	6	18	1	2	3	1	4	5	14	12	26
Verandahs and balconies		9	6	15	2	2	4	2	3	5	13	11	24
Beds and carriages	3	10	5	15		1	1	1	2	3	13	9	22
Shed or garage roofs		1		1	6		6	3	2	5	10	2	12
Ladders and scaffolds		1		1	1	1	2	3	4	7	5	5	10
Bicycle and tricycle		2	2	4	4	2	6				6	4	10
Fence		1	2	3	4		4		1	1	5	3	8
Swings and trapeze			3	3		3	3	1		1	1	6	7
Window		4		4							4		4
Tree					3		3				3		3
Horse						2	2					2	2
Other	1	12	9	21	5	3	8	1	2	3	18	15	33
TOTAL	4	74	53	127	29	23	52	24	51	75	129	129	258

verandahs, balconies, beds and carriages were next in frequency. Stairs were the only important agent responsible for more female falls. Only males fell from windows and trees but more girls fell from swings and trapezes. Of the agents affecting all ages, falls from stairs, chairs, verandahs and balconies, beds and carriages were of particular importance in the pre-school ages.

Falls on the Same Level:

Of the 151 falls on the same level, more than one-half resulted from "trips", and of the persons who fell as the result of a trip, half were in the 1–5 years age-group. Various objects could be identified as immediately causing the trip, such as rugs, cracks, uneven sidewalks, and stones, but a considerable number occurred while walking or running where no specific agent could be incriminated.

One-fifth of all falls on the same level resulted from "slips", and in contrast to trips, three-quarters of persons who fell as a result of slipping were adults. Waxed floors were the most frequent agent, followed by slips in the bathtub, on ice, wet tiles and linoleum, and slips caused by loose rugs on waxed floors.

Burns:

Forty per cent of the 52 persons burned were 5 years or younger. Over half of these burns were caused by scalding liquids and grease, and one in four was caused by electrical appliances. Half of the scalding accidents (excluding scalds from grease) and one-third of burns from electrical appliances occurred in the pre-school ages. All of the 4 scalds from grease were suffered by adults.

Poisoning:

Aspirin, the most common household remedy, was responsible for 28% of all poisoning accidents, and for one-half where the substance swallowed was in pill form (Table VIII). The poisonous substance most frequently taken in liquid form was paint thinner or turpentine. An interesting observation is that

TABLE VIII

POISONING ACCIDENTS BY AGE, SEX AND AGENT

Agent	Under 1 Year	1—5 Years		6—16 Years		17+		All Ages		Total
		M	F	M	F	M	F	M	F	
Aspirin		5	2					5	2	7
Laxative Pills		1	1					1	1	2
Sleeping Pills		1	1					1	1	2
Nerve Pills		1					1	1	1	2
Worm Tablets			1						1	1
Turpentine and Paint Thinner		2	1					2	1	3
Cologne		2						2		2
Ammonia Liniment						1		1		1
Javel		1						1		1
Anti-Freeze		1						1		1
Lysol			1						1	1
Moth Balls			1						1	1
Thermometer	1								1	1
TOTAL	1	14	8			1	1	15	10	25

in 4 out of the 7 poisonings from aspirin and 7 out of the total of 14 poisonings from substances in pill form, the pills responsible were candy-coated or flavoured.

Accidents Caused by Washing Machine Wringers:

In considering the agent, accidents caused by washing machine wringers were sufficiently common to warrant special mention. Thirty-two accidents (3% of all accidents) were caused by wringers. Twenty-five of these accidents occurred in children 16 years of age or younger, and of these, 18 involved children 5 years or younger (13 boys and 5 girls). All of the 7 adults injured in this manner were women over the age of 41. It will be apparent that wringers are a particular hazard to young children as 56% of all wringer accidents occurred in children 5 years or younger and almost 5% of all accidents in this age-group were caused by wringers.

THE ACCIDENT IN RELATION TO THE ENVIRONMENT

Place of Occurrence:

It will be noted that a larger proportion of all accidents occurred in the

kitchen (23%) than in any other single location, although the yard followed closely with 22% of all accidents (Table IX). Some 11% of all accidents occurred in the bedroom. Of the main types of accidents, more cutting and piercing

TABLE IX

1,000 ACCIDENTS BY TYPE AND PLACE OF OCCURRENCE

Type of Accident	Kitchen	Bedroom	Living Room	Inside Stair	Basement	Hallway	Bathroom	Yard	Verandah	Outside Stair	Laneway	Sidewalk	Porch	Shed	Garage	Balcony	Others	Total
Cutting and piercing	91	16	8	2	16	8	2	66	3	1	5	1	1	9	2	1	14	246
Fall from one level to another	19	22	12	43	7	4	5	48	30	37	4	2	10	5	1	1	8	258
Fall on same level	13	22	16	1	2	10	9	41	4	2	5	11	3	1			11	151
Burns	39	4		1			1	2	1						1		3	52
Poisoning	7	7	2		3		3				1		1				1	25
All others	59	35	14	4	16	13	14	68	14		8	4	2	1	1		15	268
TOTALS	228	106	52	51	44	35	34	225	52	40	23	18	17	16	5	2	52	1,000

accidents (37%) and more burns (75%) occurred in the kitchen than in any other single part of the home. Falls from one level to another were most frequent in the yard, on inside and outside stairs, and on verandahs. Falls on the same level were most common in the yard and in the bedroom. Poisonings were most common in the kitchen and bedroom, these two locations together accounting for 56% of all poisoning accidents. The frequency of the miscellaneous group, all other accidents, was greater in the yard and in the kitchen than any other single location.

Activity at the Time of Accident:

The largest single group of all accidents occurred when children were playing alone (24%). Twenty per cent occurred when children were playing with other children. A substantial proportion of all accidents (10%) occurred while the person was in the act of walking, 10% of all accidents occurred while working or playing with tools or appliances and 4% during the preparation or cooking of food. Falls were the most frequent type of accident when children were playing alone or with other children. The largest number of cutting and piercing accidents occurred when working or playing with tools or appliances. Burns were most common (35%) while preparing or cooking food.

THE NATURE OF THE INJURY

The injuries resulting from the 1,000 accidents investigated were recorded by the most serious type of injury received (Table X). It will be seen that the most frequent injuries in this series were lacerations and open wounds (47%), followed by superficial injuries, contusions and crushings (19%), fractures (11%), dislocations (0.6%), sprains and strains (6%) and burns (5%). It will be noted that in 10 of the injuries the disability resulting was considered to be "permanent" owing to loss of tissue or interference with function. This assessment of "permanent" disability was made at the time of investigation of the accident. A follow-up of injured persons to assess the long-term degree or period of their disability has not been made.

TABLE X

NATURE OF THE INJURY RESULTING FROM 1,000 ACCIDENTS

Type of Injury	Number	Permanent Disability	Death
Lacerations and open wounds	475	5	
Superficial injuries and contusions and crushing	187	1	
Fractures	112	2	
Dislocations	6		
Sprains and strains	63		
Burns	52	2	1
Poisoning	25		
Others	76		
No injury	4		
TOTAL	1,000	10	1

As far as is known, only one death occurred in the series of accidents investigated. This was a case where an eleven-month-old child was scalded by pulling a container of hot water from a stove. It is thought probable that the low death-rate in this series of accidents is due to the selection of cases inherent in this study.

ARE ACCIDENTS PREVENTABLE?

The circumstances surrounding each accident were examined carefully in an attempt to determine whether the accident could have been prevented by reasonable care and forethought. It was concluded that three-quarters of all the accidents studied could have been prevented if care and forethought to a degree which might reasonably be expected had been applied. Five per cent of the accidents did not appear preventable in these terms and in 19% it was not possible to make a decision.

SUMMARY AND CONCLUSIONS

A review of 1,000 accidents occurring in the home causing injuries for which medical attention in a hospital outpatient department was sought, is reported. A study has been made of the characteristics of the host, the environment and the agent which together contributed to the causation of the accident. Falls were the most common type of accident encountered in the series, followed by cutting and piercing accidents. The extent of the problem of home accidents in young people is made evident, 40% of all accidents studied, 92% of accidental poisonings, and 45% of all falls having occurred in children 5 years of age or younger. It is indicated that in 3 out of 4 accidents involving these young children, lack of supervision and carelessness on the part of some person contributed to the causation of the accident. Carelessness appeared to be a significant factor in half of the adult accidents. There are indications that three-quarters of the accidents observed were preventable had a reasonable degree of care and forethought been applied.

1. The assistance of the superintendents and staff of the Sacred Heart Hospital, Hull, Quebec, and the Civic, General, and St. Louis Marie de Montfort Hospitals in Ottawa, Ontario, whose co-operation made this study possible, is gratefully acknowledged.

Some Patterns of Medical Care in Canada[1]

PART II

Age-Sex Differences
Preventive Care

R. KOHN, M.A., Ph.D.[2]

THE average Canadian—if there were such a person—gets very little in the way of health services. During one year he gets so little that most of the services he gets can be expressed in fractions only (see Table 1).

TABLE 1

During one year, the average Canadian has . . .	but the averages for those using the various services are:
1.1 Doctors' office calls	3.5 Doctors' office calls
0.5 Doctors' home calls	2.8 Doctors' home calls
0.1 Clinic visits	3.0 Clinic visits
(or, in all, he sees the doctor 1.7 times)	(or, in all, he sees the doctor 4 times)
1.7 Days of hospital care	17.0 Days of hospital care
0.3 Dental visits	2.2 Dental visits

SOURCE: Canadian Sickness Survey, Bulletin No. 8.

He sees his doctor once or twice a year but only once every two years does the doctor come to his home. He spends a day or two per year at the hospital. Only once every five or ten years does he have a nurse, graduate or non-graduate. He will go for twenty years or longer without an operation or without having his eyes examined. Even to the dentist he will go only once in three years.

The picture is quite different if we look only at the people who do get to see their doctor or dentist, or optometrist, or who do go to the hospital. Many people do not receive any services, either because they do not need them or because they fail to get them for some reason or another. Those who do see a doctor at the office, do it three times a year, three times as frequently as the "average" Canadian. If the doctor visits a patient in the home, he does it about three times a year, more than five times as often as he visits the "average" Canadian. Those who go to the hospital stay there for about seventeen days, almost ten times as long as the "average" Canadian. The few people who get the services of a graduate nurse, less than 1% of the population, have the

[1]Paper delivered before the Joint Meeting of the Third Canadian Medical Care Conference and the Canadian Public Health Association in Saint John, N.B., May 31, 1956.

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nurse for an average nine days a year, more than 100 times the overall average. Those who have non-graduate nursing care, get twenty-one days per year of this care, that is 300 times the overall average for Canadians. Those who go to a dentist at all during a year, do it twice on the average, more than six times as often as the "average" Canadian.

Sex differentials

Females get about 50% more doctors' calls—home and office—than men, with very little difference among children. Most of the difference is due to the higher utilization rates of women in the childbearing ages, but even among women aged 65 and over the rates are substantially higher than those for males in the same age group. More detailed tabulations will be necessary to determine how much of this difference is due to the generally higher age of women within this age group.

Hospital admissions are likewise about 50% more frequent among women than among men. Due to the shorter average stay of women, however, the difference between the sexes is less marked in terms of per capita days of hospitalization.

Females report more examinations for glasses and also more dental visits than males.

Age differentials

On the whole, for both sexes and all types of doctors' calls outside hospital taken together, the older we get, the more often we see the doctor. This is generally true for females but the males in the adolescent age group (15 to 24 years) have a great deal fewer doctors' calls than any other age group of males. Up to the age of 65 the rate of home calls is substantially below that of office calls; above the age of 65, the rates are almost equal for the two types of visits.

The rate of hospital admissions is highest among females aged 25 to 44 years, lowest among males in the age group 15 to 24, a pattern conforming closely to the experience of the Saskatchewan Hospital Services Plan. Days of hospitalization are similarly distributed among age and sex groups.

The rate of dental visits is highest in the 15 to 24 years age group, whereas examinations for glasses generally increase with age—except for a high rate again in the 15 to 24 years group.

"Well persons" care

Lest we are left with the impression that all the services go to the sick as treatment of their illnesses, it should not be overlooked that some part is administered to people who, at the time, do not complain of any disturbance in their health. It is that part of the health services which has been reported in the Sickness Survey but is not related to any illness. This includes medical check-ups without the presence of noticeable symptoms, preventive procedures, care of normal pregnancies, the hospital stay of the newborn, etc. We probably do not go too far wrong if we label these services as preventive.

About one and three quarter million of the person-days of hospitalization

reported during the year were not associated with an illness. This is only about 7% of all hospital days, and they can almost entirely be attributed to hospitalization of the newborn.

It appears that a much larger share of physicians' services is given over to preventive care. Of the twenty-four million doctors' calls or visits reported during a year, there were over four million—or about one-sixth—apparently preventive in nature.

As might be expected, only very few of these doctors' calls, about 4.0%, were home calls, more than two-thirds of them to women, particularly women between the ages of 25 and 45, the childbearing ages. It can be assumed, therefore, that in most cases where the doctor made visits to the home, without any reported illness, it was in connection with normal pregnancies.

A higher proportion of office calls and clinic visits went to the "well". Clinic visits of any kind account for less than 10% of the number of doctors' home and office calls. Their estimated total number in the Sickness Survey was 1.94 million, and of that number about 21% were preventive. The proportion is about 24% for females making use of clinics. It is lower, about 18%, for males.

The physician's main contribution to prevention is in the nature of office calls. The following table shows the percentage these "well" visits at the doctor's office form of the total office calls:

Age	Both sexes	Male	Female
	%	%	%
All ages	23.7	15.6	28.9
Under 15	29.0	28.3	29.6
15 – 24	32.7	7.9	44.4
25 – 44	28.1	11.0	36.2
45 – 64	11.2	11.3	10.5
65 and over	13.3	16.7	10.7

This table reveals first of all that a larger share of office calls of women is preventive (29%) than that of men (16%).

When children, boys or girls, go to the doctor's office, it is in one out of three cases a preventive visit. The percentage of preventive office calls of children under 15 years of age is almost 30%, the highest percentage of any age-sex group except women in the childbearing age group. Future tabulations of survey results will reveal whether it is vaccinations and inoculations, etc., which account for this relatively high amount of preventive care among children.

Table 2 shows the rates per 1,000 persons of the preventive office calls. These rates too are highest among females aged 15 to 44 years, and among children under 15 years of age. Males aged 65 and over come next.

Of the total of 4.21 million preventive doctor and clinic visits, 2.19 million—about one-half—went to women in the childbearing ages, and almost 1 million —about one-quarter of the total—to children under 15. This suggests strongly, even before knowing more about the nature of these visits, that about three-quarters of them are due to the check-ups during pregnancy, to well-baby

TABLE 2

"Well persons" calls at the doctor's office
(Rates per 1,000 population)

All ages	Both sexes	Male	Female
All ages	268	141	394
Under 15	202	205	198
15 – 24	312	50	567
25 – 44	408	104	706
45 – 64	161	144	171
65 and over	171	189	154

SOURCE: Canadian Sickness Survey, Bulletin No. 8.

care, and to the vaccination and inoculation of children.

In comparison, it was found in the Washington Sickness Survey[1] that almost two-thirds of what is termed there as "health supervision" visits were attributable to the supervision of childbearing and well-child care during the first year of life. A survey of general practitioners' records in England[2] showed that of all "non-sickness" visits the following accounted for the percentages indicated:

routine ante-natal examinations	46%
prophylactic inoculations and vaccinations	22%
infant welfare	6%
others	26%
	100%

This is almost exactly the same distribution of preventive doctors' visits as indicated by the Sickness Survey figures so far available, although the overall rate of preventive visits in the English survey is lower (179.6 per 1,000 persons) than the Sickness Survey rate (268 office calls per 1,000 persons). This, by the way, is strange because on the whole the rate of doctors' calls in the Sickness Survey appears to be low in comparison with the findings elsewhere. The difference may be accounted for, however, by the different pattern of maternity services and prophylactic vaccinations in the two countries.

People in the low income group get only about 60% of the preventive care that the other income groups get. This is without regard to the possible greater need due to the larger number of maternity cases and children.

In the low income group preventive doctors' calls account for about 12% of all doctors' calls compared with 20% and 17% for the medium and high income group respectively. This suggests that of the fewer doctors' calls the low-income people have, a greater proportion is emergency care.

"Preventive" doctor visits have probably been under-reported in the Sickness Survey because some will not have been recorded as such. If, for instance, at a routine check-up some diseased condition is found, the visit will generally be attributed to that condition and no longer be counted as a "well" visit. This may affect particularly the rates shown for the older age group.

Comparison between Canada and the United States

Different concepts used and varying selective factors in different surveys make comparisons difficult. If we compare Sickness Survey figures with various surveys conducted over the years in the United States, we find that on the whole the Canadian figures are low in regard to the rate of doctors' calls but high in respect to hospital care. The population-physician ratio is higher in Canada and there are more hospital beds per population than there are in the United States. The fact that we have proportionately fewer doctors and more hospital beds than the United States, as well as the existence of provincial hospital services plans are no doubt factors in creating different patterns of utilization in the two countries.

In looking at some of the differences between various groups of people in the amount of health services they receive, we have to keep in mind that these figures in themselves do not indicate the adequacy or inadequacy of these services. To relate services to disability days as well as to persons, as has been done in the latest bulletin, goes part of the way. But still we can only say that certain groups get more or less care than others. Whether, for instance, the care received by the highest income group can be taken as a standard of adequacy, will require a good deal of further study: it may be just adequate, it may reflect extravagance in certain respects, or it may even be itself inadequate in regard to some services.

This discussion could deal only with some of the patterns of medical care. Others, such as the very important regional variations, rural and urban differences, variations according to social characteristics other than income groups, remain to be discussed in the light of future tabulations from the Canadian Sickness Survey.

Summary

Women generally show a higher utilization of health services than men, even of services unrelated to maternity care.

The number of doctors' calls increases, generally speaking, with age. Up to the age of 65, calls at the physician's office outweigh, by far, home calls. In the older age group, these two types of calls are fairly evenly distributed. Males aged 15 to 24 years have the lowest rates of both doctor calls and hospital days. The incidence of hospitalization is highest among females aged 25 to 44 years.

Most of the preventive physicians' services are administered in the form of office calls. About three-quarters of them appear to be related to check-up during pregnancy, well-baby care, and vaccinations and inoculations. The rate of preventive physicians' care is lower in the low income group.

Compared with the people in the United States, Canadians receive less physicians' care but make greater use of hospitals.

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2. Logan, W. P. D.: General Practitioners' Records, Studies on Medical and Population Subjects No. 7, General Register Office, London: H.M.S.O., 1953.

Tuberculosis Mortality and Morbidity—Age and Sex Trends

C. A. WICKS,[1] B.A., M.D.

DURING the past several years many reports have called our attention to the decreasing tuberculosis mortality rates with the lack of any parallel or comparable decrease in tuberculosis morbidity rates particularly in respect to elderly males. Few reports have attempted to present in detail the statistical evidence on which such statements were based and few have attempted to offer explanations for the observed facts. This paper presents the available statistical facts regarding age and sex trends in tuberculosis mortality and morbidity in Canada during the period 1947 to 1954 inclusive, with brief comments to stimulate discussion and further thought.

What is the most suitable and accurate of the yardsticks presently available to measure tuberculosis morbidity? Notifications of new cases of active tuberculosis plus the number of relapses each year by age and sex groups would present a reasonably accurate picture of tuberculosis morbidity, at least as brought to light by our current case-finding methods. However, it is apparent, in the first place, that notifications of new active cases of tuberculosis fall short of the actual number. (Reporting of tuberculosis, as required by law, should be accepted as a responsibility by all practitioners.) In the second place, figures as to relapse in tuberculosis are not readily available. "Re-admissions" to sanatoria include many persons who are re-admitted for continuation or resumption of incomplete treatment previously interrupted (i.e.—those who left sanatoria without medical consent) in addition to those returning to sanatoria for re-check examinations, review, etc. As an index of tuberculosis morbidity, total admissions to sanatoria would not be accurate because such figures would include re-admissions and those with non-tuberculous disease.

Therefore, one is limited in a choice of presently available yardsticks of tuberculosis morbidity to "tuberculous first admissions to tuberculosis institutions". (It is, perhaps, pertinent to note here that any figures involving admissions to sanatoria, may in the future become even less useful as an index of tuberculosis morbidity, particularly if any significant increase occurs in the number of tuberculous patients who are treated at home and who would not appear as sanatorium admissions.) Other and more searching methods of expressing tuberculosis morbidity, such as the number of persons found with active tuberculosis per year per 100,000 tuberculin reactors, or the number of tuberculin reactors per 100,000 in the population, etc. would be desirable, but that would constitute a paper in itself. If one desires to present tuberculosis morbidity by age- and sex-groups, one is further limited by the fact that the published statistics from many sources do not show age- and sex-grouping for

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first admissions separately from total admissions, or do not separate tuberculous from non-tuberculous admissions, or do not include tuberculous patients admitted to Federal sanatoria.

Furthermore, tuberculous first admissions to institutions expressed merely as numbers do not accurately depict any trend unless based upon the number of persons in the various age- and sex-groups within the general population for the years under consideration. Therefore, in presenting tuberculosis mortality and morbidity trends by age- and sex-groups, it is necessary to express our figures as rates per 100,000 population in each age- and sex-group.

Because the figures published by the Dominion Bureau of Statistics for Canada fulfill best our requirements we shall use those figures (i.e., age-sex specific tuberculous mortality rates, and age-sex specific tuberculous first admission rates to tuberculosis institutions).

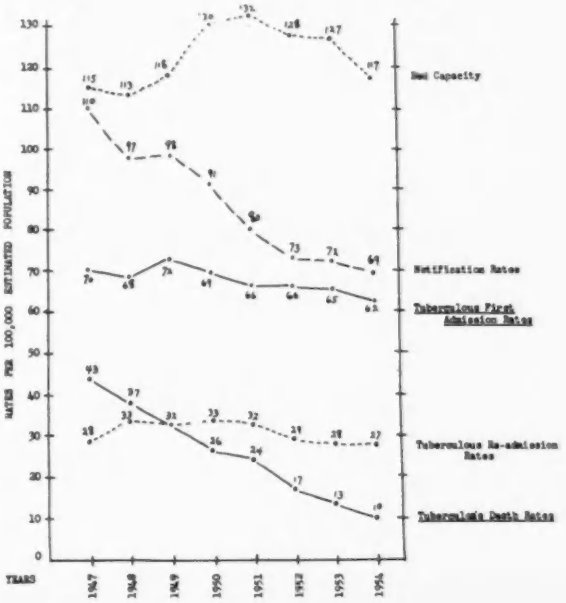
Let us first review in general some *trends in tuberculosis statistics* without reference to age- or sex-groups and as exhibited in graph #1. This graph shows that while the tuberculosis death rates have rather markedly decreased between 1947 and 1954, the total tuberculous first admission rates have only slightly declined. Although it does not pertain to this paper, we might glance briefly at the bed capacity in tuberculosis institutions which rose to a peak in 1951, but has since fallen. Notifications of tuberculosis have apparently decreased markedly (but this must be due to increasingly inadequate reporting). Tuber-

GRAPH #1

TRENDS IN TUBERCULOSIS STATISTICS—CANADA—(1947–1954)

Rates per 100,000 population

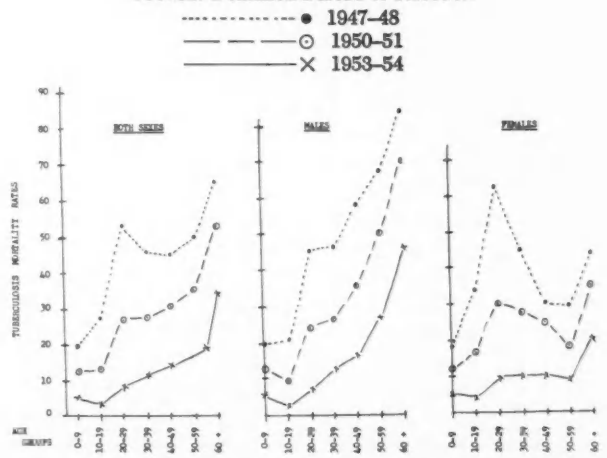
SOURCE: Graph 3, Tuberculosis Statistics, D.B.S., 1954.



culosis re-admissions have shown no appreciable change at least up to and including the figures for 1954.

Graph #2 shows the age-curves of *mortality* for both sexes, combined and separately. This graph indicates that tuberculosis mortality rates have been

GRAPH #2
AGE–SEX SPECIFIC TUBERCULOSIS MORTALITY RATES–CANADA–
(1947–1954)
Per 100,000 population at stated age
SOURCE: Dominion Bureau of Statistics.



decreasing steadily for all ages. The most striking observation is the particularly marked decrease in the death rate for females between 20 and 29 years.

Graph #3. The columns of *morbidity* for both sexes, combined and separately, show that tuberculous first admission rates are increasing in the age-groups 0–9, 50–59 and 60-plus years; decreasing in age-groups 10–19 and 20–29 years with only slight decrease or variable change in age-groups 30–39 and 40–49 years. This graph also illustrates the obviously greater tuberculosis morbidity among males than females in those over 40 years of age.

Graph #4 brings *mortality and morbidity* together for comparison by years. It will be noted that the morbidity graphs are becoming shorter in the early adult ages but with higher columns for the older ages. The mortality graphs are becoming flattened out and begin to appear as a shallow staircase with an upward grade as age increases. Attention is drawn to a comparison between the projected *morbidity* for 1964 and the actual 1947 *mortality*. (The projected morbidity histogram was developed and constructed by extrapolation from the contour graphs for each age-group as presented in graph #3.) We might ask, will tuberculosis morbidity experience follow the tuberculosis mortality pattern but about 15 to 20 years behind? Will the tuberculosis morbidity curve 20 years from now look somewhat like the tuberculosis mortality curve of today?

POSSIBLE EXPLANATIONS

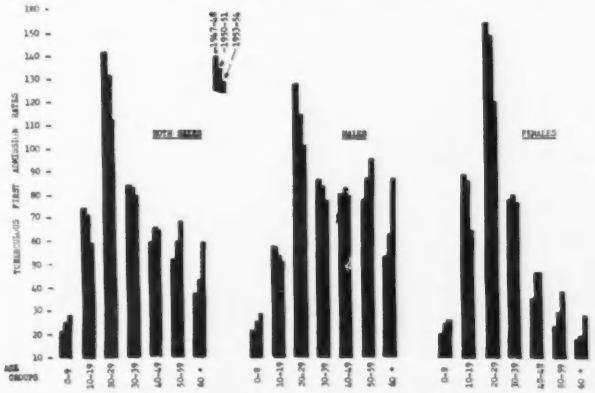
Let us briefly consider possible explanations for the statistical facts which have been presented. The tuberculosis morbidity or the tuberculous first admis-

GRAPH #3

AGE–SEX SPECIFIC TUBERCULOSIS FIRST ADMISSION RATES–CANADA–
(1947–1954)

Per 100,000 population at stated age

SOURCE: Graph 8, Tuberculosis Statistics, D.B.S., 1954.



sion rates to institutions, or the "incidence" of tuberculosis is obviously dependent upon the thoroughness of our search. The more intensive our tuberculosis case-finding, the greater will be the reported "incidence" or "morbidity". Similarly, if we increase the number of examinations or search more diligently for tuberculosis among any particular age- or sex-group, we shall bring to light an apparently increased incidence rate in that group.

The finding of increasing tuberculous first admission rates among children 0–9 years of age was somewhat unexpected. Although this increase in the morbidity rates between 1947 and 1954 inclusive, for boys and girls in this age-group, is not of the same magnitude as the increase in the morbidity rates for those over 50 years, nevertheless, the increase is significant. To stimulate further thought and discussion, the following possible explanations might be mentioned:

The increased detection of tuberculosis among Indian and Eskimo children. That this may be an important factor was demonstrated in a memorandum from The Institutions Section of the Health and Welfare Division of the Dominion Bureau of Statistics, "Tuberculosis among Indians and Eskimos 1950–52". During that three-year period the average tuberculous direct admission rate for Indians and Eskimos was 12.3 times that for the remainder of the population; and 20% of the Indians and Eskimos admitted were in the age-group 0–9 years in contrast to the 5% of all others who were admitted in that age-group.

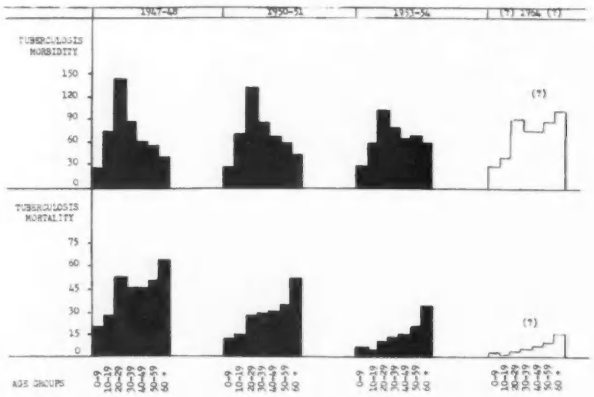
The increased intensity of tuberculosis case-finding by examination of contacts and tuberculin-positive children.

The admission to sanatoria of children with tuberculous meningitis, whereas such children previously died within a few weeks of that form of tuberculosis in general hospitals.

The acceptance for sanatorium treatment of children with less serious forms of primary infection tuberculosis within the past ten years.

It could represent, of course, a true or real increase in the rates of development of tuberculosis among those under 10 years of age, but that is not likely if reports of decreasing tuberculous infection rates among children are correct.

GRAPH #4
COMPARISON OF TRENDS IN TUBERCULOSIS MORALITY AND MORBIDITY—CANADA—(1947–1954)
BOTH SEXES



Some possible reasons for the increasing tuberculous first admission rates in the *older age-groups* might be:

The increased intensity of tuberculosis case-finding among *all* age-groups. (That our tuberculosis case-finding has become more intense can be seen from the following figures—although it would be more informative if we knew how these chest X-ray films were spread among the various age- and sex-groups in the population.)

Year	Total Chest X-ray films taken in all tuberculosis case-finding programs in Ontario	
1945	200,000	100%
1950	835,000	418%
1955	1,300,000	650%

As those over 50 years of age during the relatively short period under study would show a fairly constant and a high percentage infected with tubercle bacilli, more cases of tuberculosis would be found merely because of more examinations, assuming that those over 50 years of age shared in the increased number of examinations even in the same proportion as did the other age-groups.

The increased intensity of tuberculosis case-finding pin-pointed especially to this particular age-group. The hospital admission chest X-ray program may touch disproportionately upon those over 50 years of age. (It might be interesting and useful to collect information upon the ages of those who are examined routinely for tuberculosis in our various case-finding projects.) The emphasis upon routine chest X-ray films during employment and as a condition of employment could possibly have increased the number of males over 50 years examined for pulmonary tuberculosis. The chest X-ray program introduced within recent years for those in homes for the aged, jails, etc., might have influenced the tuberculosis morbidity figures for 1954, but not likely before that year.

It could represent, of course, a true or real increase in the rate of development of tuberculosis among those over 50 years of age harboring tubercle bacilli, but this interpretation would require a separate explanation.

Effect upon Tuberculosis Case-Finding and Treatment

What effect are these facts regarding tuberculosis morbidity having upon the pattern of tuberculosis case-finding and upon the practice of medicine in

sanatoria? As we know that the heaviest seeding by tubercle bacilli is in that section of our population presently over 50 years of age, it is there that we should exert our most intensive case-finding efforts. We have good statistical evidence for intensive case-finding procedures among those over 50 years of age—particularly males. Therefore, special attention should be given to public education in respect to the importance of those over 50 years of age having periodic chest X-ray films, and the continuation and expansion of routine chest X-ray films for hospital admissions, for those employed (as a condition of employment), for elderly persons wherever they can be reached including homes for senior citizens, those committed to jails, the transient unemployed or migrant workers, etc.

The increased numbers of persons over 50 years of age in our tuberculosis hospitals has very definitely affected the practice of medicine in such institutions. More cardio-vascular, renal and cerebral degenerative disease as well as neoplasms are observed and require management. Among the decreasing number of deaths in which tuberculosis is a factor, we find an increasing proportion where there co-exists some non-tuberculous disease related to the aging process or commonly accompanying the older ages. In an effort to support that statement, the figures for the year 1955 for the Province of Ontario are presented. Of 242 deaths in 1955 in Ontario where tuberculosis was listed as the primary cause, 142 or 59% occurred in sanatoria. Analyzing those 142 deaths in sanatoria where the primary cause was given as tuberculosis, we note that in 43 or 30% there was associated some non-tuberculous condition with "cardiac" topping the list. In sanatoria in Ontario during 1955 there were 64 additional deaths where the primary cause was stated as some non-tuberculous condition. This number represented 31% of the total of 206 deaths in sanatoria in Ontario during 1955. Of those 64 deaths, there were 3 with no tuberculosis and 61 with tuberculosis present, and a "cardiac" condition accounted for 22. Summarizing this study, "cardiac" conditions were noted in 19%; cancer of lung in 4.4% and neoplasms of other organs in 4.4% of sanatorium deaths. Silicosis, pulmonary fibrosis, emphysema, cerebral haemorrhage, arteriosclerosis, and diabetes were also listed on the death certificates.

Summary

As a yardstick of tuberculosis control, tuberculosis mortality should be replaced by some more appropriate measurement of the occurrence of tuberculosis. It appears necessary at the present time to use tuberculous first admission rates as the index of tuberculosis morbidity, although any change in policy which would omit the admission of tuberculous patients to sanatoria for treatment would destroy the value of such admission rates as an index of tuberculosis morbidity. (Tuberculous infection rates in the general population would probably be the preferred, and will probably be the ultimate measurement of the occurrence of tuberculosis.)

The co-operation of all practitioners is required in the further control of tuberculosis by: (*a*) reporting all new cases of tuberculosis according to provincial regulations. (*b*) referring patients regularly for chest X-ray screening, with the realization that early pulmonary tuberculosis may exist without

symptoms or signs, and that those over 50 years of age have been most heavily infected in previous years by the tubercle bacillus.

Statistical studies of tuberculosis morbidity have their limitations, but the information made available in this manner presents a challenge to explain and interpret the reported facts. From careful interpretation of such statistical evidence may come some guide for future planning.

The available statistical evidence has been assembled and has been found to support the statement that tuberculosis mortality is decreasing considerably in all age-groups, while tuberculosis morbidity (as judged from tuberculous first admission rates) is decreasing much more slowly, with an increasing morbidity (as revealed by our case-finding methods) among those over 50 years of age in both sexes, but particularly among males.

The apparent increase in the tuberculous first admission rates in children 0–9 years of age within the period under study is perhaps explained chiefly on the basis of increased admission of tuberculous Eskimo and Indian children —but this situation justifies further close observation.

In an attempt to offer for consideration some possible explanations for the increasing tuberculosis morbidity rates among those over 50 years of age, it was noted that: (*a*) Increased case-finding efforts spread evenly over all ages could be expected to bring to light more cases of active tuberculosis among those in the older age-groups where tuberculous infection is most common; and (*b*) Our increasing case-finding efforts in the past eight years have possibly screened those over 50 years to a somewhat greater extent than those in the younger age-groups because of the hospital admission chest X-ray program as well as the increasing acceptance of periodic chest X-ray examinations as a condition of employment.

The suggestion was ventured that tuberculosis morbidity experience may follow by approximately 15 to 20 years the pattern of tuberculosis mortality. As each generation or each succession of cohorts receives less and less tuberculous infection, it is perhaps inevitable that the last stand for tuberculosis mortality, tuberculosis morbidity and finally for tuberculous infection will be among those reaching the older ages.

It was suggested that in order to visualize the age and sex distribution of our tuberculosis case-finding program, it might be useful to collect and accumulate information regarding the age- and sex-groups of those we are screening by chest X-raying or tuberculin testing.

Evidence was presented to demonstrate the relatively high incidence at present of non-tuberculous diseases among the increasing number of patients over 50 years of age admitted to sanatoria.

In our tuberculosis case-finding we should "screen" all sections and all age-groups in the population, but special attention is required for that portion of our population over middle-age which has been most heavily seeded by the tubercle bacillus.

ACKNOWLEDGEMENTS

Acknowledgement is gratefully expressed to Mr. B. R. Blishen, Mr. H. G. Page and Mr. A. F. Smith of the Dominion Bureau of Statistics, to Dr. G. J. Wherrett of the Canadian Tuberculosis Association, to Dr. R. G. Ferguson of Saskatchewan, to Dr. G. C. Brink, Dr. K. M. Shorey, Dr. S. Grzybowski and Mr. D. Wise of the Ontario Division of Tuberculosis Prevention and to Dr. A. H. Sellers and Mr. W. B. Marr of the Ontario Division of Medical Statistics for information and assistance generously provided.

Public Health Education in Newfoundland[1]

DAPHNE PRATT,[2] B.A.

IT is seven years now since Newfoundland entered into Confederation with Canada and in that time mainland Canadians have heard many facts and, I fear, some fiction about Newfoundland and Newfoundlanders. In what I have to report I hope to add to the former and avoid the latter. We Newfoundlanders feel that there is much that still needs to be told. Also, if we in public health seem anxious to have others understand our problems of a scattered population and difficulties of transportation and communication, it is because these factors must continually be taken into account in all our planning. At certain times of the year our climate conspires to complicate the best laid plans still further. The plane which carries the visiting official and the boat which carries the outport nurse on her rounds are rendered earth-bound for days on end and weather that is good for fishing may mean a poor attendance at community meetings. I once heard the following announcement made in a small church: "There will be a meeting of the Select Vestry on Wednesday night, if Wednesday be a blustery night, if Wednesday be not a blustery night, the meeting will be held on the first blustery night thereafter." The minister had learned, as we all must, the value of a flexible schedule and the virtue of patience. I would like to present some of the facts about Newfoundland which influence, to some degree, the development of a public health education program in our province.

The island is some 42,000 square miles in area. This is about 85% of the combined area of Nova Scotia, New Brunswick and Prince Edward Island. Newfoundland has only 2,240 miles of highroads and its 420,000 people live in 1,300 towns and villages, of which only 27 have a population of over 1,000. A large proportion of these villages are situated along our 6,000 miles of coastline and many are accessible only by the sea.

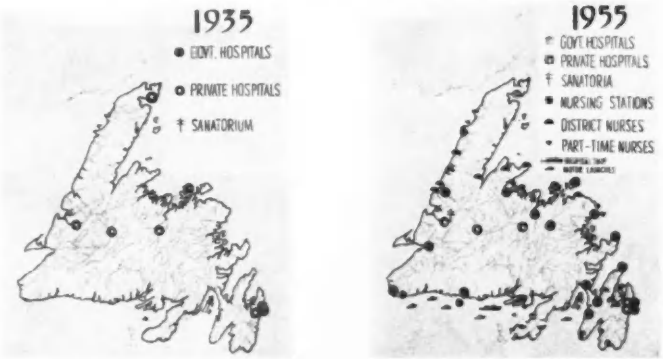
A vital concern of the Newfoundland Department of Health over the years has been the provision of medical care and hospitalization for our people. A look at the map showing the small number of hospitals in the province in 1935 will show the need for this concern. At that time there were 37 public health nurses and 28 doctors employed by the Department of Health. For many years a strong emphasis on curative medicine was not only justifiable but inevitable. Prior to 1949 there were not many organized municipalities in Newfoundland and the responsibility for many health services normally accepted by municipalities rested solely with the Department of Health.

The map of 1955 shows the rapid growth of facilities over a twenty-year period. The provincial Department of Health now administers 22 hospitals.

[1]Presented at the forty-fourth annual meeting, Canadian Public Health Association, Saint John, N.B., May 29–31, 1956.

[2]Director of Health Education, Department of Health, Newfoundland.

HEALTH SERVICES IN NEWFOUNDLAND



There are 112 public health nurses in Cottage Hospitals, nursing stations and districts, and 122 doctors outside St. John's, of whom 58 are medical officers of health with the Department of Health. Over 40% of our population is covered by a health and hospital insurance plan. There are also eight public health dental service areas which have been established over the past five years.

Establishment of a Health Education Division

The existence of a wide gap between the provision of public health services on the one hand and people's health knowledge and health action on the other, is to be expected. It is one of the primary functions of health education to help to bridge this gap. In Newfoundland, a health education survey was made in 1949 and the setting up of a Health Education Division was recommended to the provincial Department of Health. Recommendations for staff included the appointment of a director, and four regional health educators. My appointment as Director was made in December, 1949, and a stenographer was appointed a year later. This is our present staff and the problem of recruiting trained health education personnel is one which we share with other provinces and one which we have not yet solved.

In the situation which I have purposely described in some detail, it is obvious that our health education program is dependent on the understanding and participation of many people, including public health nurses, doctors, dentists, sanitarians, teachers, directors of government and voluntary agencies and local community leaders. To enliven their interest in, and their knowledge of, community health education, to help them plan health education programs and to provide helpful, appropriate materials is a major aim of my work, an aim which can be most effectively realized by participating in in-service training programs and by providing consultative service to these groups of people whenever possible. I need hardly add that this phase of our health education program is particularly rewarding when it can be developed with trained personnel.

Working Relationships With Public Health Nurses and Teachers

The words of Dr. Derryberry, "Every contact of a health worker with the

public, either individually or in groups, has educational potentialities", are, I think, particularly significant when applied to one of our most valuable health workers, the public health nurse. If I were to single out a group in Newfoundland with very great educational potentialities, it would be our public health district nurses. In Cottage Hospitals the pressure of institutional duties makes work in the community almost impossible. There are, of course, many educational opportunities in pre-natal, well-baby and out-patient clinics and, indeed, in the day-to-day hospital routine, but in many cases pressure of work tends to push these possibilities into the background. A district nurse with an interest in her people and a knowledge of health education methods can be the most valuable of all health educators. I would be less than honest were I to leave the impression that all public health nurses in Newfoundland have this knowledge but where these two qualities are present, the results are heartwarming.

During the orientation of Newfoundland's public health nurses, I am given the welcome opportunity of interpreting the health education program to them and a generous share of their annual convention is devoted to health education. Consultation during field trips or during the nurses' infrequent visits to St. John's can be provided in some cases and correspondence must be relied on in others. One of the tangible results of this relationship is the increasing use of educational media made by public health nurses. These nurses head the lists each year in requests for printed materials and through Federal Health Grants we have been able to provide two Cottage Hospitals and several of our district nurses with film and filmstrip projection equipment. Portable filmstrip projectors have proven most practical in our outport districts and gasoline filmstrip projectors have proven useful in non-electrified areas. Our program with public health nurses needs to be extended much further. When the shortage of nurses becomes less acute, making longer orientation periods possible, when the number of nurses with public health training increases and when it becomes possible to have public health nurses on the staffs of at least some of our Cottage Hospitals, this phase of our health education program will be capable of much more effective development.

One of the functions of health education as drawn up by the American Medical Association is "to contribute to the improvement of the quality of the health education of the school child". The Newfoundland teacher training curriculum, including the health education program is of a high standard but its implementation is seriously hampered by a grave shortage of trained teachers. Over the past three years, I have been afforded the valuable opportunity of helping to revise the health course of 24 sessions for first-year student-teachers at the Newfoundland Memorial University. This revised course was instituted last year. The importance of a meaningful health course for teachers is fully realized. The faculty of the Department of Education of the University and representatives of the Department of Health will continue to evaluate and, if necessary, revise this course.

Considerable time has been given to working with another important group of health workers—the sanitarians. The first food handlers' courses ever to be held in Newfoundland resulted from joint planning with our Health Inspection

Division and were held in four of the largest centres in Newfoundland—Corner Brook, Grand Falls, Gander and St. John's. It was found necessary to devote time to building up a supply of teaching aids and to developing local materials for this division. By working in the field with the sanitarians, we have been able to develop a "capsule" course for food handlers which it is hoped can now be given by sanitarians in various districts.

Dental Health Education

Expanding public health services create many opportunities for integrated health education programs, so many opportunities, in fact, that the shortage of health education staff is a serious handicap. This is particularly true in the field of dental health. In the past five years, public health dental services for children have been established in eight widely separated areas of the province. It is essential that sustained dental and nutrition education form an integral part of these services. Few of the dentists in these areas are public health trained and there are no dental hygienists in the province.

A sustained dental health education program has been developed over the past five years in one area—the St. Barbe district on the northwest coast, where the Junior Red Cross Travelling Dental Service was initiated five years ago. One of the most effective phases of this program has proven to be the regular round-table conferences held each spring and fall with the dentist, the Nutritional Adviser, the Junior Red Cross Director and the teachers of the area. At the fall conference, plans are made for dental and nutrition education in the coming year. At the spring conference the year's work is evaluated. It is difficult to measure the results of a health education program such as this, but resultant activities are encouraging signs. In this area where fresh milk is practically unobtainable and tinned milk is comparatively expensive, the increased use of skimmed milk powder, the "skimmed milk parties" organized by local teachers in their schools, the installation of a mechanical cow in one school, are at least minor victories. Tooth-brushing, milk-drinking, the cutting down on sweet foods and the use of the free cod liver oil available to schools, were chosen for particular emphasis by the teachers in this area. A new dentist comes to the St. Barbe district each year and all have had some public health training. Chairside instruction, talks to school-children and adult groups and community "health nights" organized by the dentist help to round out the health education program. In second and third visits to the communities where this program has been most consistent, succeeding dentists report noticeable improvements in the general condition of children's mouths.

Adult Education

Annual conferences of various government field workers have provided opportunities for interpreting our program. During Adult Education field workers' training courses, health projects have been planned for homemakers' groups and 4H Clubs. (This work has been seriously curtailed during the past year because of the severe shortage of field workers in the Adult Education Division.) Our services to many of the voluntary agencies have been largely confined to supplying demands for printed and visual teaching aids. We have worked closely with the Newfoundland Tuberculosis Association in

planning the health education program for the large-scale B.C.G. vaccination services in which, to date, 70,000 children in Newfoundland and Labrador have received B.C.G. vaccine.

Included among our more routine activities are: the distribution of pamphlets, posters and films, planning of educational programs to accompany immunization campaigns, and preparation of newspaper and radio material for regional exhibitions and fairs.

You will, by now, be as conscious as I am of several important subjects of which no specific account has been given. Our infant death rate cries out for a concerted, co-ordinated education program. The number of accidental deaths is climbing in our province, as in others, and in the field of safety education the need at present is for co-ordination of the efforts of various agencies. In the field of mental health the need for education is urgent. Our problems in environmental sanitation are vast and the need for arousing community awareness and community action is pressing.

There are broad, new developments in Newfoundland today which, in a long-range view, should have profound effects for good on the welfare of our people. I do not refer only to material welfare, important as new industries and mineral discoveries are, or to the far-reaching effects of improvements in transportation and communications. I refer to the steady growth of local government which is helping to change the old reproach "they ought" to the community-minded resolve "we must". Well over one hundred thousand of our people outside St. John's are now electing their own mayors and councils to govern their municipal affairs in 61 towns and villages incorporated during the past 13 years. There is a growing enrolment in our Newfoundland Memorial University and plans are being discussed for its Extension Department. Surely this, in time, will help to satisfy some of our needs for trained personnel. I am thinking, too, of the free medical, dental and optical care plan for all Newfoundland children with all that such a plan entails of organization and education and with all its promise of healthier generations of Newfoundlanders. In health education our hope for the distant future is bound up with such developments as these. Our health education program is now in its seventh year. In the past years much time has been given to interpreting our services and building up sound working relationships with many groups and individuals. Our experience has been that such relationships are built up slowly and we feel that we have made a substantial beginning. Our hope for the health education program is that from this beginning we will go on to consolidate our gains and to broaden and strengthen our in-service training programs, which seem to hold most promise for the future.

The Quality of Fluid Milk[1]

J. E. WATT,[2] D.V.M., D.V.P.H.

BECAUSE of its importance to our health and welfare and because of its extreme perishability, milk has been the subject of more legislation and more control measures than probably any other food product. It might seem logical to expect that as a result of this control all milk and related products consumed are of the highest quality, but this is far from being true, for while the term "quality" is often attached to such products for the sake of sales appeal, in too many cases there is no justification for the claim.

The prime object when milk control first began was to eliminate diseases attributed to its consumption and in this respect much has been accomplished. Today, however, the word quality has much wider implications so that a quality product must be not only incapable of causing disease, but it must also be free from any excessive bacterial content and extraneous matter, and it must have a high nutritive value, a pleasant taste, and a long storage life. For such to be possible, all stages of its production and processing must be carried out on the highest sanitary level, and it is the responsibility of public health authorities to assure that this is done.

Quite recently, the Department of Agriculture of Ontario passed the Milk Industry Act and regulations under this Act will be forthcoming dealing with raw milk production. This has caused some confusion in regard to the part to be played by those engaged in public health work, but it is to the credit of the Department that at long last some effort is to be made to improve the milk situation on a provincial scale. More is needed, however, than a few broad regulations governing farm methods and it would seem that quality control should be left solely in the hands of the public health authorities with the economic aspect being the responsibility of the Department of Agriculture.

Data concerning milk quality in the province as a whole are difficult to procure, but some idea of raw quality can be gained from the recent survey conducted by the Division of Sanitary Engineering, Department of Health, and from summaries compiled by this department from laboratory reports of various centres. Figures from these two sources reveal an improvement in satisfactory grades from 83% in 1953 to 87.3% in 1955—an encouraging trend. However, samples classed as satisfactory were those which were graded 1 and 2 by the resazurin method and in using a test as lenient as the resazurin there is no justification for including a grade 2 as satisfactory. A disheartening feature of the raw summaries is that figures are available for only about 56%

[1]Presented at the Joint Public Health Conference of the Ontario Public Health Association and the Canadian Institute of Sanitary Inspectors held in Toronto, Ontario, September 24–26, 1956.

[2]Public Health Veterinarian, Oshawa, Ontario.

of the estimated 20,000 fluid shippers in the province and that an average of only 8.8 samples per year are taken from those producers who are tested. Thus it could well be that much of the milk is not tested during the hotter months, so that figures quoted could be misleading, as the quality of milk still drops sharply during the summer. How poor the quality is of milk produced by those 46% of the producers not covered in the summaries is anyone's guess. Thus, we have no data available covering the quality of nearly half our producers and tests that were done on the remainder might be too few in number to present a true picture.

Information regarding the quality of pasteurized fluid milk was sought from the Division of Sanitary Engineering. It was learned that there are 535 dairies in Ontario, 345 of which are under full-time health control. No other information was available. It was stated that figures regarding the number of pasteurized samples taken and the results of bacterial analysis of such samples are not compiled. The number of dairies operating which were not certified by this division were stated to vary so much that a figure could not be given. (It is noted, however, that in the raw milk survey published by the division in 1953, 16.4% of Ontario dairies were not certified.) It is, indeed, to be deplored that figures relating to pasteurized quality are not compiled. The time and money involved in all the various aspects of milk control are largely wasted if no records are gathered for study, yet this is said to be the case.

Because of this regrettable lack of information from the responsible source, one cannot present figures to indicate the quality of pasteurized products over the province. It might seem logical to assume that with the raw quality leaving much to be desired, the same would apply to the finished product.

The following are suggestions as to how an improvement in fluid milk quality could be attained:

Provincial Code. If improvement is to be realized on a wide scale, then the establiishment of a provincial code is the first necessity. Such a code would be prepared by the Provincial Department of Health. It should cover all phases of production and processing as well as establishing definite quality requirements. Local health departments and units could enforce the code. There exist, at present, wide differences in requirements from place to place so that programs vary from very comprehensive to very lenient. To say a code is impractical because it could not, at present, be enforced everywhere is not a sound argument for if we applied the same argument to all such legislation public health would be in a sorry state indeed. A code could be well enforced now over a large portion of the province, and as new areas come under better control there would be a sound basis available on which to build a program. As it now exists, milk control is a hodge-podge effort so that a producer cut off in one market is often gladly accepted in another and a finished product considered excellent in one place is regarded as unsatisfactory in another. These conditions exist and they will continue until a uniform code is available and put into operation. It must be stressed, too, that while the requirements set out in a code must be practical, they must not be reduced to a level where compliance could be attained with a minimum of effort. The standards must be high so that the desired improvement would be made.

Laboratory Services. Various routine tests are the basis of any quality program and a reliable laboratory service is fundamental to its success. A sufficient number of laboratories in convenient locations is a necessity, and it is equally important to have the laboratory properly equipped and staffed to handle routine samples sent as well as special testing as may become necessary from time to time. The laboratory's one function is to serve adjacent health departments and units and it must be prepared to carry out tests requested, not merely those which are the quickest and easiest to do.

If a uniform milk program is ever to be realized, all laboratories must follow a standard procedure. This apparently is not done at present, therefore central control over all laboratories is the only solution. Many hundreds of samples are being tested where there is no control and where variations in techniques probably exist. Any deviation in temperature of incubation or type of media will result in wide differences in results so that comparisons between milk sheds or even within the same shed could be misleading. Private, civic and individual dairy laboratories have their place, but they contribute nothing but confusion unless they follow standard methods. Personal experience has proven that evidence of private testing can sometimes be produced showing ideally satisfactory results for months on end when obvious conditions and other laboratory results show the opposite to be true. Thus, progress in milk quality will be seriously retarded until all laboratories involved are properly controlled.

Trained Personnel. A sufficient number of properly trained persons is a necessity and their training must be such that they will be readily accepted by producers and distributors alike. Some aspects of milk control tend to be neglected on our public health courses, especially in regard to the mechanics and operation of dairy equipment. And, too, training cannot cease with the issuing of a diploma, for changes are continuously occurring in various phases of milk production and processing and a person responsible for milk control should be familiar with such changes before he has to deal with them. Experience may be a great teacher, but many mistakes are often made while experience is being gained. It would seem most advisable that refresher courses be held for public health personnel each year so that all can keep ahead of new developments.

Proper utilization of trained personnel is of great importance, too, and work is often unnecessarily duplicated. Just one example of this is where provincial personnel travel many miles to perform a routine inspection of dairies which are under full-time local health supervision. It would seem more logical for these civil servants to concentrate their efforts in areas where there is no local control and leave other places to the health department involved. Should the need arise, they could be called upon for advice or assistance. No really useful purpose is served by duplication of efforts.

In many local areas much of the simpler routine work is done by the highest trained personnel, consuming time and effort which could well be directed towards more complex problems. This misuse of training adds to the cost of a program and detracts from its efficiency.

Surveys and Studies. Several excellent studies of various aspects of milk pro-

duction have been made in different areas of the U.S.A. and many of us have tried to make use of the findings. However, conditions in Ontario may be quite different from areas where these studies were made. The recent raw milk survey conducted by the Provincial Department of Health has been mentioned and the data so collected are of value. There is, however, a great need for a comprehensive survey in this province regarding the efficiency of tests performed, and factors which have a real bearing on milk quality. Information so gained might result in uniformity of requirements for the farmer and the adoption of the most reliable tests for discovering conditions known to be undesirable.

An Efficient Local Program. This is a broad heading and involves basic milk control since the system in Ontario places the local medical officer of health in the key position. This may be the most satisfactory arrangement for most public health work, but in the field of milk control it results in an overlapping of milk sheds, so time and money are wasted. Be that as it may, the medical officer of health controls the situation in his locality and progress made depends largely upon his attitude towards the importance of food control. Unfortunately for the consuming public, some medical officers of health attach very little importance to this aspect of their overall program and are content with a minimum of endeavour, and in many cases no effort is made to secure a qualified staff. The necessity of weighing babies, inoculating children, or abating the nuisance of an unsanitary privy is appreciated, but the control of food and milk is often regarded as an unnecessary frill which can be forgotten.

The first consideration in any local program must be the decision as to the tests to be used and the standards to be set. With no provincial code, there are wide variations in these basic matters. Thus, pasteurized counts required vary from 5,000 to 50,000 and standards of raw milk vary from a grade 2 resazurin to a plate count of 100,000 with marked differences in the number of unsatisfactory tests tolerated.

Most centres, however, do use the resazurin test as the basic raw standard as advocated by some provincial authorities. There may be merit to this in that some uniformity is attained and the test is simple for the laboratory to perform. There, however, the merit ceases, for as a basic raw test it is inadequate. At best it is a rough screening which is hardly a good foundation on which to build a sound program. The resazurin test bears no relationship to the plate counts used to assess pasteurized quality. This seems most illogical and it allows many unsanitary practices to escape detection. Figures compiled from two milk sheds during April to December, 1955, and involving 104 producers, support these statements. Of 955 samples tested, 294 (30.8%) had counts of 200,000 or more, yet only 8.4% were grade 3 or 4. Of the 294 samples graded 200,000 and more by the plate counts, 154 (52.3%) were reported as grade 1 and 60 (20.4%) were grade 2.

True, the number of samples is small and a more comprehensive comparison would be desirable. However, these results do indicate that the resazurin test fails to detect a large percentage of high-count milks.

The standard plate count is by far the better test as an indication of farm

sanitation, and a report given at the forty-second annual meeting of the International Association of Milk and Food Sanitarians (1) substantiates this opinion. The report covered a study of 7,949 milk samples from 700 producers over a twelve-month period. This report stated: "It is quite evident that the standard plate count picked up the largest percentage of unsatisfactory samples. . . . It appears that the use of the S.P.C. alone will result in a satisfactory level of counts on the finished product. Where grading is by the dye reduction method it is essential to supplement it by the S.P.C." Surely, then, it is time for authorities in Ontario to revise their standards for raw quality or at least to conduct a study to ascertain how reliable their recommendations actually are.

One would hesitate to recommend the S.P.C. as the sole test for quality, for experience has shown that a low count is possible in the presence of mastitis. A routine test for mastitis, then, is also needed and some would say that here the resazurin method has value. However, a theory often voiced is that after four hours of milking, leucocytes begin to lose their ability to reduce the dye, and if this is so then the test is of little value on routine samples. It is suggested that a microscopic examination be done on all samples for leucocyte determination, with polymorphonuclear cells being identified. Any increase in "polys" indicates infection. A standard plate count together with this polymorphonuclear cell determination could be done without undue hardship on the laboratory and a comprehensive picture of quality could be so obtained.

As for a recommended standard, it is suggested that it be set at an S.P.C. of under 200,000/ml. with no evidence of infection. This should be quite easily attainable and should certainly not be any more lenient.

The frequency of sampling is of great importance and there is really no program when only a few are taken over a year. Sampling must be done at least monthly, and preferably twice monthly. In large milk sheds this may seem impossible, but there is no reason why dairy personnel cannot lend assistance if supplied with the necessary sterile equipment. The same applies to drivers of bulk milk trucks, for surely a man given this responsibility could be trained to take a proper sample. Such assistance would be an improvement over the taking of a few samples each year and of the practice of taking one sample from a bulk truck as the sole check of all producers involved.

Tests other than those mentioned would seem unnecessary, except perhaps for periodic ring-tests and special ones that may become necessary from time to time in investigating specific problems. The sediment test seems to be popular, but serves no real purpose, for the only person who can properly assess this aspect of production is the farmer himself by the appearance of his strainer pads.

Follow-up farm visits are the heart of milk control, for only by personal contact, observation, and demonstration can we hope to educate producers as to proper methods. It cannot be done by analyzing laboratory reports in the office and mailing printed instructions. As time goes by these follow-ups become less numerous, and a routine inspection once or twice yearly will suffice for many shippers.

In every milk shed there are producers who fail to respond to education as

to proper methods, and such producers have no right to sell a product for human consumption. Some health personnel state that they would never cut off a farmer. This may be regarded as a generous state of mind, and it no doubt enhances popularity with the careless farmer. It has no place in an effective milk control program. Chronic offenders must be eliminated from all sheds if progress in quality is to be achieved. Purchasing milk on a quality basis would hasten response to education.

Despite the shortcomings of raw milk control, it seems the general trend is to give raw milk more attention than the pasteurized product. While control of the source is most necessary, we must not lose sight of the fact that the only reason for this control is to ensure that the consuming public receives a quality finished product. The lack of information from provincial sources has been mentioned; it is also deplorable that several of the larger municipalities stated that they did not know what percentage of pasteurized products tested met their recommended standards. This is most difficult to understand. Perhaps it is thought that pasteurization in itself is always a perfect operation, which, of course, is a ridiculous assumption. Many annual reports from various health units and departments state that all pasteurized samples analyzed were found satisfactory. What is meant, of course, is that all samples were graded A by the phosphatase test, which, while commendable, is hardly justification for the claim of all being satisfactory; for if an A phosphatase test is to be the sole requirement for the finished product, then all raw control measures are a waste of time.

The tests, as are now routinely applied to pasteurized products, would seem to be adequate, with the exception that a psychrophilic determination should be also included as a routine test. Keeping quality and flavour bear no relationship to plate counts or other tests done, and with the trend being towards longer holding periods and fewer deliveries this aspect of quality should receive attention.

Once again, recommended standards vary from place to place, with a range in plate counts of from 5,000/ml. to 50,000/ml. Most strive for negative coliform tests as should be the case. The plate count required must relate to the raw count, and if this is set at 200,000/ml., then the final count should be certainly less than 20,000/ml.

The remarks made in this paper relate to quality of fluid milk. We should remember that while such quality leaves much to be desired it is infinitely better than the quality of milk used for other purposes, and that it represents well under half of the total milk production. Results of tests covering raw milk used for such products as cheese, ice-cream, condensed milk, etc., should shame everyone entrusted with the responsibility of food control. Milk is our most valuable food regardless of to what finished product it is directed, and perhaps the day will come when all milk and milk products are of the quality the consumer has the right to expect. Before that day can arrive, there is much work to be done.

References

1. Report of the Committee on Applied Laboratory Methods, 1955: J. Milk & Food Technol., 1956, *19*: 7.

Canadian Journal of Public Health

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ACCIDENTS IN THE HOME

IN this issue of the Journal, Dr. E. H. Lossing and Dr. Roger Goyette, of the Department of National Health and Welfare, present a study of 1,000 home accidents occurring in the Ottawa area. This is an important contribution to our knowledge of home accidents. Accidents are the fourth leading cause of death when all ages are considered and the leading cause of death at each age between 2 and 39 years. In 1954, 8,372 Canadians died of accidental causes and 2,128, about 25 per cent, were killed in the home. These percentages are considerably higher in certain ages. In children under 5 years of age and in persons over 70, 58 per cent and 48 per cent respectively of all accidental deaths were the result of accidents in the home. These two age-groups together account for almost 70 per cent of all home accidental deaths. Home accidents in that year killed as many children 14 years or younger as did all the communicable diseases together, almost exactly five times the number killed by poliomyelitis and almost four times the number that died from tuberculosis.

Little is known about the disabilities caused by non-fatal home accidents. Studies in the United States indicate that for every home accidental death there may be 100 to 150 injuries resulting in disabilities lasting over 24 hours and four injuries giving permanent disabilities. Before the maximum benefit can be obtained from educational programs, it is necessary that we know more of the extent of the home accident problem, particularly in terms of the non-fatal injury and determine more precisely the causes and circumstances relating to home accidents.

The study of Doctors Lossing and Goyette was most helpful and showed that falls were the most common type of accident encountered, followed by cutting and piercing accidents. The age factor is of importance since 40 per cent of all accidents studied, 92 per cent of all accidental poisonings and 45 per cent of all falls occurred in children 5 years of age or younger. Lack of supervision and carelessness on the part of some persons contributed to the causation in 3 out of every 4 accidents involving young children. Carelessness appeared to be a significant factor in half of the adult accidents.

World-wide attention is being given to this subject since accident rates have steadily increased. In 1900, in England and Wales, fatal home accidents were

14,200. It is interesting to compare this mortality with that from communicable diseases, which accounted for 43,000 deaths. In 1954, accidental home deaths rose to almost 21,000 and there were only 229 deaths from communicable diseases.

The problem is becoming increasingly important. There is general agreement that three-quarters of home accidents are preventable if a reasonable degree of care and foresight are exercised. Similar studies would be helpful in adding more facts concerning non-fatal accidents and would stimulate public health authorities to include the prevention of home accidents as a definite part of their public health program.

A WARNING NOTE

LAST December, the Department of Health of Detroit, Michigan, reported the occurrence of 161 cases of diphtheria with 5 deaths. In Winnipeg, Manitoba, 46 cases of diphtheria were admitted to the isolation hospital during the late fall. How did these situations develop?

In Detroit, regardless of economic conditions, preventive treatments are available to all through publicly sponsored clinics or the private physician's office. A medical participation plan in that city provides for all medically indigent to go to their family physician to receive preventive treatments without charge. In Winnipeg, every effort has been made to provide immunization facilities through clinics and practising physicians. It is clear that adequate facilities have been provided in both cities. Perhaps, as a result of the absence of diphtheria over the past few years, parents and some physicians have become complacent about the disease and fail to recognize the need for immunization. Many parents, too, who have had their children immunized fail to remember that the protection is not permanent and that it has to be reinforced periodically. In the past when there were many carriers of diphtheria bacilli in the community, contact with the disease stimulated immunity, but now dependence must be placed largely on the administration of booster or stimulating doses. There may also be a tendency to neglect immunization against diphtheria, tetanus and whooping cough in view of the widespread administration of poliomyelitis vaccine. A convenient and practical schedule can be arranged to permit of administering all of these preventive treatments and the number of visits to the clinic or the physician's office can be reduced. In fact, the administration of poliomyelitis vaccine may well be the occasion to urge the administration of the present triple vaccine against diphtheria, tetanus and whooping cough.

These occurrences in Detroit and Winnipeg indicate that there can be no lessening of the efforts of departments of health and practising physicians in the control of diphtheria and other communicable diseases for which there are established procedures of immunization.

The price of safety is constant vigilance. Communicable diseases are still a serious menace and neglect of the specific measures of prevention through immunization may be tragic.

Program

FORTY-FIFTH ANNUAL MEETING

OF THE

Canadian Public Health Association

IN CONJUNCTION WITH THE

Ontario Public Health Association

KING EDWARD HOTEL, TORONTO

MAY 27, 28, 29, 1957

MONDAY, MAY 27, 8.30 a.m.

Registration. Mezzanine Foyer.

MONDAY, 9.30 a.m.

PLUMBING INSPECTORS' SECTION

Elizabeth Room

Business Session.

Industrial Wastes as they Concern the Plumbing Inspector.

J. G. DUNCAN, B.A.Sc., Chemical Engineer, Ontario Water Resources Commission.

Panel Discussion: **ONTARIO PLUMBING CODE.**

Chairman of Section and members of the Code Committee.

MONDAY, 10.00 a.m.–12.00

MINISTER'S CONFERENCE FOR ONTARIO MEDICAL OFFICERS OF HEALTH

Ballroom

HON. MACKINNON PHILLIPS, M.D., Minister of Health, Ontario.

MONDAY, 10.00 a.m.

MEDICAL CARE SECTION

Reception Room

Hospital Staff Requirements in Ontario.

JOHN HORNAL, B.A., Director, Hospital Training Programs, Ontario Hospital Service Commission, Toronto, Ontario.

Techniques of Payment to Hospitals

BEN HAALAND, Department of Public Health, Saskatchewan.

CYRIL McKAY, Department of Public Health, Saskatchewan.

Rehabilitation in a General Hospital.

Speaker: JOHN S. CRAWFORD, M.D., Toronto Western Hospital, Toronto.

Discussion: JOSEPH BERKELEY, M.D., Riverview Hospital, Windsor, Ontario.

MONDAY, 10.00 a.m.

ENVIRONMENTAL HYGIENE SECTION

Blue Room

Business Session.

MONDAY, 12.30 p.m.

LUNCHEON—GENERAL MEMBERSHIP

Sheraton Room

Presiding: D. F. DAMUDE, D.V.M., President, Ontario Public Health Association.
Address: "For Whom the Bell Tolls". W. J. Deadman, M.D., Pathologist, formerly with the Hamilton General Hospital, Hamilton, Ontario.

MONDAY, 2.00 p.m.

EXECUTIVE COUNCIL
CANADIAN PUBLIC HEALTH ASSOCIATION

Room 219

MONDAY, 2.00 p.m.

MEDICAL CARE SECTION

Reception Room

Quality Control of Medical Care.
Speaker: I. OGDEN WOODRUFF, M.D., Hospital Insurance Plan, New York City, N.Y.
Discussion: VINCENT L. MATTHEWS, M.D., Department of Public Health, Saskatchewan.

Cost Control in Medical Care.
Speaker: HARDING LE RICHE, B.Ch., Research Medical Officer, Physicians' Services Incorporated, Toronto, Ontario.
Discussion: J. OSLER LOCKHART, M.D., Hamilton, Ontario.

Provision and Payment of Diagnostic Services.
(a) Pathology—H. G. PRITZKER, M.D., Mount Sinai Hospital, Toronto.
(b) Radiology—K. F. MacEWAN, M.D., Toronto General Hospital, Wellesley Division, Toronto.
(c) Hospital—G. HARVEY AGNEW, M.D., Department of Hospital Administration, School of Hygiene, University of Toronto,

MONDAY, 2.00 p.m.

DENTAL PUBLIC HEALTH SECTION

Room 216

Purposes and Methods for the Evaluation of Community Dental Health.
R. M. GRAINGER, D.D.S., Dental Statistics and Research Section, Division of Medical Statistics, Ontario Department of Health.

Evaluation of Caries: Preventive Measures Applicable at the Community Level.
G. NIKIFORUK, D.D.S., Chairman, Division of Dental Research, University of Toronto.

Television and Radio Presentation Techniques Relative to the Promotion of Dental Public Health.
D. S. CATTON, Vickers and Benson Limited.

Business Session.

MONDAY, 2.00 p.m.

PLUMBING INSPECTORS' SECTION

Elizabeth Room

Aspects and Application of Public Health Legislation.
JAMES A. TAYLOR, Deputy Solicitor, Township of Scarborough, Ontario.

MONDAY, 2.00 p.m.

SECTIONS OF MEDICAL OFFICERS OF HEALTH AND PUBLIC HEALTH EDUCATION (Combined Session)

Ballroom

Panel Discussion: **WHAT DO WE WANT IN HEALTH EDUCATION IN CANADA?**
Chairman: JULES GILBERT, M.D., Director of Health Education, Ministry of Health, Quebec.

Participants: D. CURREY, M.D., Medical Officer of Health, St. Catharines-Lincoln Health Unit, St. Catharines, Ontario.
M. JARRETT, D.D.S., Director of Dental Services, Wellington County Health Unit, Fergus, Ontario.
MRS. G. PURCELL, P.H.N., Director of Public Health Nursing, East York-Leaside Health Unit, Toronto, Ontario.
G. WILSON, Sanitary Inspector, East York-Leaside Health Unit, Toronto.
F. J. HARDEN, D.V.M., Department of Health, Peterborough, Ontario.
MILTON H. BROWN, M.D., School of Hygiene, Toronto, Ontario.

MONDAY, 2.00 p.m.

VETERINARY PUBLIC HEALTH SECTION

Room 215

Some Observations on Milk Sanitation in Europe.
C. K. JOHNS, Ph.D., Canada Department of Agriculture, Ottawa.

Psittacosis.
L. W. McPHERSON, D.V.M., Animal Diseases Research Institute, Hull, Quebec.

Animal Leptospirosis—Its Human Significance and Present Status.
H. FISH, D.V.M., Ontario Veterinary College, Guelph, Ontario.

Business Session.

MONDAY, 3.30 p.m.

PUBLIC HEALTH NURSING SECTION

Hunting Room

Business Session.

MONDAY, 4.30 p.m.

INDUSTRIAL HYGIENE SECTION

Elizabeth Room

Organization Meeting.

MONDAY, 6.30 p.m.

RESOLUTIONS AND NOMINATIONS COMMITTEE ONTARIO PUBLIC HEALTH ASSOCIATION

President's Suite

MONDAY, 7.30 p.m.

BOARD OF DIRECTORS, ONTARIO PUBLIC HEALTH ASSOCIATION ANNUAL MEETING

President's Suite

MONDAY, 8.00 p.m.

EXECUTIVE COUNCIL (Second Session) CANADIAN PUBLIC HEALTH ASSOCIATION

Room 219

TUESDAY, MAY 28, 9.30 a.m.

GENERAL SESSION

Sheraton Room

Presiding: D. F. DAMUDE, D.V.M., President, Ontario Public Health Association.

Provision of Preventive Services under a Prepaid Medical Plan.
W. B. STIVER, M.D., Medical Director, Physicians' Services Incorporated, Toronto.
Discussion: J. C. MacMASTER, M.D., Manitoba Medical Plan.

Social and Cultural Aspects of Malnutrition.
DR. HELEN C. ABELL, Rural Sociologist, Canada Department of Agriculture, Ottawa.

Speaker and Subject to be announced.

TUESDAY, 2.00 p.m.

HEALTH OFFICERS' SECTION

Yellow Room

Poison Control Centres.

C. COLLINS-WILLIAMS, M.D., The Hospital for Sick Children, Toronto, Ontario.

Progress in Cancer Control.

R. M. TAYLOR, M.D., Executive Director, National Cancer Institute of Canada.

Rehabilitation.

BRUCE YOUNG, M.D., Superintendent of Rehabilitation, The Workmen's Compensation Board, Toronto, Ontario.

TUESDAY, 2.00 p.m.

PUBLIC HEALTH NURSING SECTION

Fountain Court

Panel Discussion: **HOW CAN PUBLIC HEALTH NURSES FUNCTION MORE EFFECTIVELY WITH NEW CANADIANS?**

Chairman: STEPHEN DAVIDOVICH, Assistant Director, Community Programs Branch, Ontario Department of Education, Toronto, Ontario.

Participants: MRS. MARION ROSS, Nutritionist, Ontario Department of Health.
MISS CHARITY GRANT, Regional Liaison Officer, Toronto, Department of Citizenship and Immigration, Government of Canada.
MISS MARY WILSON, Reg. N., Chairman, Public Health Nursing Section, Canadian Public Health Association.

TUESDAY, 2.00 p.m.

DENTAL PUBLIC HEALTH SECTION

Room 216

Conference on **Report on Qualifications, Functions and Training of the Public Health Dentist.**

TUESDAY, 2.00 p.m.

ENVIRONMENTAL HYGIENE SECTION

Room 212

Recent Developments in Municipal Sewage Treatment.

DAVID S. CAVERLEY, M.A.Sc., Senior Sanitary Engineer, Ontario Water Resources Commission.

The Role of the Food and Drug Inspector in the Food Sanitation Field.

O. B. PETERSON, B.Sc.A., Food and Drug Inspector, Toronto, Food and Drug Directorate, Department of National Health and Welfare.

TUESDAY, 2.00 p.m.

HEALTH EDUCATION SECTION

Room 215

Chairman, MISS M. CAHOON, B.Ed.

Panel Discussion: **CO-ORDINATION OF THE HEALTH EDUCATION PROGRAMS OF VOLUNTARY AND OFFICIAL HEALTH AGENCIES**

Chairman: MISS ANNE GRANT, M.P.H., Health Education Consultant, Canadian Tuberculosis Association, Ottawa, Ontario.

Participants: WM. F. J. ANDERSON, M.P.H., Health Education Consultant, Canadian Tuberculosis Association, Toronto, Ontario.
J. BROCKIE, Ontario Division, Canadian Cancer Society, Toronto.
R. HOPPER, Executive Director, Ontario Society for Crippled Children, Toronto.
C. SMITH, Director of Health Education, Saskatchewan Department of Public Health.
JULES GILBERT, M.D., Director of Health Education, Ministry of Health, Quebec.
JOHN KEAYS, Director of Education Services, Department of Health and Social Services, Fredericton, New Brunswick.

TUESDAY, 2.00 p.m.

MEDICAL CARE SECTION

Hunting Room

Panel Discussion: **PLANNING FOR HOSPITAL BED REQUIREMENTS.**

Chairman: MALCOLM G. TAYLOR, Ph.D., Consultant to the Ontario Hospital Services Commission.

Participants: V. M. HOGE, M.D., Assistant Surgeon General, Chief, Division of Hospital and Medical Facilities, U.S. Public Health Service.

JOSEPH WILLARD, M.D., Research Director, Department of National Health and Welfare, Ottawa.

Changing Patterns of Medical Care and Insurance Plans.

GORDON HATCHER, M.D., Community Research Associates, Hagerstown, Md.

Business Meeting.

TUESDAY, 2.00 p.m.

VITAL AND HEALTH STATISTICS SECTION

Room 219

The Second Mile in Health Statistics.

J. H. DOUGHTY, M.A., Director of Statistics, British Columbia Department of Health and Welfare, Victoria, B.C.

Health Statistics in the Medical Curriculum.

J. WYLLIE, M.D., Professor of Preventive Medicine, Queen's University, Kingston, Ontario.

The Future of Morbidity Statistics.

R. KOHN, Ph.D., Health and Welfare Division, Dominion Bureau of Statistics, Ottawa, Ontario.

Some Problems in Industrial Morbidity Statistics.

R. B. SUTHERLAND, M.D., Division of Industrial Hygiene, Ontario Department of Health, Toronto, Ontario.

TUESDAY, 2.00 p.m.

VETERINARY PUBLIC HEALTH SECTION

Room 214

Some Aspects of the Effect of Antibiotics on Veterinary Public Health.

P. P. FITZGERALD, D.V.M., Timiskaming Health Unit, New Liskeard, Ontario.

Panel Discussion: **THE PROBLEM OF UNINSPECTED MEAT WITH SPECIAL REFERENCE TO THE PROPOSED ONTARIO REGULATIONS GOVERNING SLAUGHTER HOUSES.**

Chairman: A. V. HALL, D.V.M., Department of Health, London, Ontario.

Participants: R. F. COLGATE, D.V.M., Department of Health, Ottawa, Ontario.

G. A. EDGE, D.V.M., Ontario Department of Health, Toronto, Ontario.

T. MELADY, D.V.M., Huron County Health Unit, Goderich, Ontario.

S. N. WARD, D.V.M., Department of Public Health, Toronto, Ontario.

TUESDAY, 6.30 p.m.

PRESIDENTS' RECEPTION

L. A. PEQUEGNAT, M.D., and D. F. DAMUDE, D.V.M.

Reception Room

TUESDAY, 7.30 p.m.

ANNUAL DINNER

Ballroom

Presiding: L. A. PEQUEGNAT, M.D., President, Canadian Public Health Association.

Presentation of Honorary Life Memberships.

Introduction of the President-Elect, STEWART MURRAY, M.D.

Presentation of the Association's Certificate of Office to the retiring President, L. A. PEQUEGNAT, M.D.

Address: "Where Are We Going?" G. E. HALL, M.D., Ph.D., D. ès Sc., LL.D., F.R.S.C. President and Vice-Chancellor, University of Western Ontario, London, Ontario.

WEDNESDAY, MAY 29, 9.30 a.m.

SECTIONS OF DENTAL PUBLIC HEALTH AND MEDICAL OFFICERS OF HEALTH (Combined Session)

Crystal Ballroom

Symposium: **INTEGRATING THE DENTAL HYGIENIST INTO A COMMUNITY HEALTH PROGRAM.**

Chairman: R. A. CONNOR, D.D.S., Dental Health Officer, St. Catharines-Lincoln Health Unit, St. Catharines, Ontario.

The Curriculum Content of Courses in Dental Hygiene.
MISS ANDREE BRUNELLE, Supervisor of Training in Dental Hygiene, University of Toronto.

The Dental Hygienist in a Health Unit Dental Program.
MISS GERTRUDE M. HANMER, Supervisor, Public Health Nurses, St. Catharines-Lincoln Health Unit, St. Catharines, Ontario. MISS MARY ISKEY, Dental Hygienist, St. Catharines-Lincoln Health Unit, St. Catharines, Ontario.

The Dental Hygienist in a Metropolitan Health Department Program.
MISS M. SMILLIE, District Supervisor, Division of Public Health Nursing, Department of Public Health, Toronto, Ontario. MISS G. T. SHACHTER, Dental Hygienist, Dental Division, Department of Public Health, Toronto, Ontario.

WEDNESDAY, 9.30 a.m.

PUBLIC HEALTH NURSING SECTION

Sheraton Room

Alcoholism as an Illness.
MISS R. MARGARET CORK, Psychiatric Social Worker, Alcoholism Research Foundation, Toronto, Ontario.

Other papers to be arranged.

WEDNESDAY, 9.30 a.m.

PUBLIC HEALTH EDUCATION SECTION

Room 215

Professional Problems in Health Education.
WM. F. J. ANDERSON, M.P.H., Health Education Consultant, Ontario Tuberculosis Association.

Business Meeting.

Television in a Community Health Education Program—A Present Day Necessity.
B. T. DALE, M.D., and D. GEEKIE, C.P.H., Wellington County Health Unit, Fergus, Ontario.

WEDNESDAY, 9.30 a.m.

SECTIONS OF VETERINARY PUBLIC HEALTH AND ENVIRONMENTAL HYGIENE (Combined Session)

Elizabeth Room

Objectives of a Veterinarian Employed in the Health Field by Private Enterprise in the Dairy Industry.
E. MUMFORD, D.V.M., The Borden Company Limited, Toronto, Ontario.

WEDNESDAY, 9.30 a.m.

SECTIONS OF MEDICAL CARE AND INDUSTRIAL HYGIENE

(Combined Session)
Hunting Room

Chronic Diseases in Canada.
F. B. ROTH, M.D., Deputy Minister of Public Health, Saskatchewan.

Chronic Diseases in the Canadian Hospital Program.
K. C. CHARRON, M.D., Director of Health Services, Department of National Health and Welfare, Ottawa, Ontario.

Panel Discussion: **HEALTH INSURANCE IN INDUSTRY.**

Chairman: J. H. BAILLIE, M.D., The Bell Telephone Company, Toronto, Ontario.
Participants: ANDREW ANDRAS, Assistant Director of Research, Canadian Labour Congress.
R. B. SUTHERLAND, M.D., Division of Industrial Hygiene, Ontario Department of Health, Toronto, Ontario.
DAVID E. WATTS, Confederation Life Association, Toronto, Ontario.
J. D. KING, Director of Industrial Relations, Ford Motor Company of Canada, Limited.

WEDNESDAY, 9.30 a.m.

VITAL AND HEALTH STATISTICS SECTION

Blue Room

Symposium: **HOME ACCIDENTS.**
Chairman: J. WYLLIE, M.D., Professor of Preventive Medicine, Queen's University, Kingston, Ontario.
Participants: E. H. LOSSING, M.D., Director, Epidemiology Division, Department of National Health and Welfare, Ottawa, Ontario.
CHRISTIAN SMITH, Director of Health Education, Saskatchewan Department of Public Health.
E. J. BROWN, Assistant Chief, Vital Statistics Section, Health and Welfare Division, Dominion Bureau of Statistics, Ottawa, Ontario.

Vaccination and the Decline in Paralytic Poliomyelitis.
E. H. LOSSING, M.D., Director, Epidemiology Division, Department of National Health and Welfare, Ottawa, Ontario.

WEDNESDAY, 2.00 p.m.

GENERAL SESSION

Crystal Ballroom

Presiding: L. A. PEQUEGNAT, M.D., Medical Officer of Health, Toronto, Ontario.
Presidential Address: L. A. PEQUEGNAT, M.D.
The President will then conduct the formal business constituting the Annual Meeting of the Association, receiving the reports of the Nominating Committee, Committee on Resolutions and the Executive Council.

Where are We Going in Dental Public Health?
H. K. BROWN, D.D.S., Dental Consultant, Department of National Health and Welfare, Ottawa, Ontario.

What Do We Want in Health Education in Canada?
Report from the Panel Discussion in the Public Health Education Section. JULES GILBERT, M.D., Director of Health Education, Ministry of Health, Quebec.

Conserving the Health of Federal Government Employees.
E. L. DAVEY, M.D., Chief, Civil Service Health Division, Department of National Health and Welfare, Ottawa, Ontario.

WORLD HEALTH DAY—APRIL 7TH

The anniversary of the coming into force of the Constitution of the World Health Organization in 1948 is being marked throughout the world. World Health Day in 1957 is co-sponsored by the Food and Agriculture Organization.

"FOOD AND HEALTH"

NEWS NOTES

International

National Health Services

An announcement has been made by the Chancellor of the Exchequer, House of Commons, London, England, that as part of the effort to reduce expenditures the price of welfare milk supplied to children under the age of five and to expectant mothers would be increased from the equivalent of 1.75¢ an imperial pint to 4.66¢. The price of a school meal would be increased to 14¢ from 11.6¢. The weekly national health services contribution would be 19.8¢ from the employee in place of 10¢ and the employer's contribution of 17.5¢ would be doubled. A saving of $161,000,000 would be made if these proposals were implemented.

Federal

Fifty medical and dental physicians from across Canada met at the Canadian Civil Defence College, Arnprior, Ontario, from March 4–8 to discuss multiple health problems arising from a thermo-nuclear attack on the North American continent. The course was under the direction of Dr. K. C. Charron, Director of Health Services, Ottawa. He was assisted by Dr. F. C. Pace, Medical Consultant, Special Weapons Section; Dr. G. E. Fryer, Medical Consultant, Health Services; Miss E. A. Pepper, Nursing Consultant; and J. E. Matthews, Medical Supplies Officer.

Federal health grants of $11,625 and $18,559 respectively for the 1956–57 fiscal year have recently been approved to assist with the development of two health units in Ontario—Sudbury and District and Wentworth County. The Sudbury and District unit covers the city of Sudbury and twenty adjacent townships with a total population of more than 57,000. The Wentworth unit, with headquarters in Hamilton, serves about 69,000 people in the towns of Dundas, Stoney Creek and Waterdown and eight townships. Both units were organized in August, 1956.

Two recent appointments to the organic chemistry section of the Food and Drug Directorate, Department of National Health and Welfare, are Eldon Clair and Klaus Genest, who are working with Charles Farmilo, Ph.D., on an international research project studying the origins of opium. Mr. Clair is a graduate of the University of New Brunswick and was formerly a chemist with the crime detection laboratory of the Royal Canadian Mounted Police. Mr. Genest is a graduate of the Free University of Berlin and was formerly a research assistant at the University of Toronto.

An extensive revision of the Opium and Narcotic Drug Act has been introduced in the Senate under the title of "An Act to Provide for the Control of Narcotic Drugs".

Dr. R. F. Farquharson, head of the Department of Medicine, Faculty of Medicine, University of Toronto, has been appointed Vice-President (Scientific) of the National Research Council of Canada with responsibilities for medicine. Dr. Farquharson will succeed Dr. J. B. Collip, Dean of Medicine at the University of Western Ontario, who will be completing his term of service in the National Research Council next fall.

British Columbia

Dr. C. E. Dolman, Head of the Department of Bacteriology and Immunology, University of British Columbia, has been recently elected to a lifetime fellowship in the New York Academy of Sciences. The Academy is one of the oldest institutions in science in the United States. This honour recognizes Dr. Dolman's contributions in bacteriology and immunology.

All field staff with the Provincial Department of Health will meet again this year in Vancouver from April 23 to 26 for the annual Public Health Institute. The four-day meeting serves as an in-service training course. Among the topics this year will be: Motor vehicle accidents, and the role of the B.C. Safety Council; Applications of business methods to public health; Poisons and poison control centres; Early diagnosis and management of the hard-of-hearing preschool child; Salmonella infections. Two of the sessions will be devoted to sectional meetings for nurses, sanitarians and medical health officers. The opening session will be addressed by the Honorable Eric Martin, Minister of Health and Welfare.

In conjunction with the Public Health Institute, the British Columbia Branch of the Canadian Public Health Association will hold its annual meeting on Tuesday, April 23.

Dr. Charles L. Hunt, who was director

of the Division of V.D. Control from 1948–1954, has returned to the staff and is now Physician in charge of Clinics.

Dr. H. M. Brown, Director of the Cariboo Health Unit, has resigned to accept a position with the Alberta government.

Alberta

Dr. Patrick P. Rowan, who recently came to Alberta from Northern Ireland, has been appointed Medical Officer of Health to the Grande Prairie Health Unit.

Dr. David Stewart, a Glasgow graduate, has been appointed Medical Officer of Health to the Sturgeon Health Unit based in Edmonton.

Saskatchewan

Child Safety Day will be observed in Saskatchewan on May 5. Sponsored by the Saskatchewan Department of Public Health, this day will be used to focus public attention on education in accident prevention.

Dr. Leo Kawula, recently appointed medical consultant to the division of maternal and child health, has completed a tour of all northern outpost hospitals in Saskatchewan. The purpose of his trip was to assess practices in midwifery and prenatal teaching.

Miss Mary Earnshaw, nursing consultant in the division of child and maternal health, has been organizing staff training workshops within the organized health regions to study the principles of child growth and development.

Manitoba

The provincial Bureau of Maternal and Child Hygiene has planned two training institutes for April; one on prenatal education for registered nurses from various public health agencies and obstetrical departments of hospitals and the other on newborn and premature care for the benefit of doctors and a limited number of nurses. The Winnipeg General Hospital School of Nursing and the University of Manitoba are co-operating in both institutes.

Accident prevention and the roll of the public health worker in public safety will be the main theme of the annual Spring General Meeting of the Manitoba Public Health Association on April 22. Several authorities on the subject from various government departments and agencies have been invited to present their opinions on this increasing problem.

Public Health Engineers with the provincial health department in Winnipeg have held schools for operators of water and sewage plants in the province during the past month. They provide a basic course for beginners, a second year course and, for the first time, an advanced course for those wishing to attend for a third year. In addition to receiving technical knowledge, the operators are acquainted through the schools with the services that are available to them from the health department.

A Children's Dental Health Clinic, which provides free dental health treatment for children in grades 1 and 2 from medically indigent families, was opened in March in the City of St. James. Sponsorship is by the St. James Kiwanis, the city and the school board. Equipment and supplies are provided by the provincial Department of Health through Federal Grants.

A four-week course for trainees in public health sanitation is now being conducted by the Division of Sanitation. This course is to supplement the correspondence course given by the C.P.H.A. The course includes environmental sanitation, rodent control, camp sanitation, housing and vital statistics. Innovations include classes in English by Mr. M. S. McCracken, personnel officer, and in public speaking by Miss R. Hawkings of the Division of Health Education.

As a public service feature, Mr. Sid Boyling, manager of radio station CHAB, Moose Jaw, has instituted "Focus", a five-minute health program which is heard daily, Monday through Friday, in co-operation with the Department of Public Health. Written and presented by Miss Rowena Hawkings, the program features stories on family and community health.

Ontario

A new mental hospital for emotionally disturbed children will be established at Thistletown on a 92-acre site purchased by the Ontario Government from the Hospital for Sick Children. This research and treatment centre will be the first of its kind in Canada and the program to be developed will be unique in North America.

A province-wide Conference on Old Age will be held at the University of Toronto from May 31 to June 3, 1957 and will bring together for the first time representatives from over fifty provincial organizations directly or indirectly concerned with the problems of aging. The roster of speakers will include Dr. Clark Tibbitts, Chairman, Committee on Aging of the United States Department of Health, Education and Welfare, Mrs. Barbara Shenfield, Dr. James Tyhurst, Allan Memorial Institute of Psychiatry, Montreal, and prominent gerontologists in the fields of psychology, economics,

medicine, public health, education and social services.

An increase of 178% in numbers of alcoholics in Ontario from 1945 to the end of 1956 is noted in the sixth annual report of the province's Alcoholism Research Foundation and there is a consequent demand for more treatment services, basic research and public education. The rate of alcoholism has increased from 1,040 per 100,000 adult population in 1945 to 2,210 per 100,000 in 1956.

During 1956, 15,883 prisoners in jails throughout the province were X-rayed by the Division of Tuberculosis Prevention of the Ontario Department of Health and ninety-one inmates were recommended for sanitorium treatment.

On February 21 in the Royal York Hotel, Toronto, a Workshop Conference was held on dental problems affecting children in Toronto, under the auspices of the Academy of Dentistry of Toronto, with the assistance of the Department of Public Health, Toronto. The purpose was to improve knowledge and understanding of the extent and character of dental health problems affecting Toronto's children and to permit more effective mobilization of all community resources for an aggressive attack upon these problems.

Forty-seven delegates from sponsoring agencies participated and Dr. F. H. Compton, Director of Dental Services for the Department of Public Health, presided. Dr. L. A. Pequegnat, Medical Officer of Health, addressed the delegates at the opening of the conference. Three prominent authorities, reflecting advanced thinking in regard to community dental health and educational psychology, acted as consultants. These were Dr. J. M. Wisan, Chief, Dental Health Section, Department of Public Health, Philadelphia, Pa., Dr. Muriel Uprichard, Assistant Professor in Educational Psychology, School of Nursing, University of Toronto, and Dr. H. R. McLaren, Assistant Chief, Dental Health Division, Department of National Health and Welfare, Ottawa.

The conference recommended that a Council on Dental Health be established to be representative of the groups which formed the Workshop Planning Committee. This Council was asked to take action in bringing to the appropriate agencies the recommendations arising out of the Workshop Conference.

Dr. H. W. Henderson, Director of the Community Mental Health Clinic at the Ottawa Civic Hospital, has been appointed Director of Community Mental Health Services of the Ontario Department of Health. Dr. Henderson succeeds Dr. B. H. McNeel, recently appointed Chief of the Department's Division of Mental Health.

New Brunswick

Mme. Alberta Senecal, Information Services Division, Department of National Health and Welfare, Ottawa, visited the New Brunswick Department of Health and Social Services on March 5, 6, and 7. In addition to conferring with Mr. John Keays, Health Educator, she met with many representatives from divisions of the Department and from voluntary organizations.

Final arrangements are being made for the annual meeting of the N.B.-P.E.I. Branch of the C.P.H.A. to be held in Moncton on April 25 and 26 at the Brunswick Hotel. On the day preceding this meeting, the Directors and Health Officer of the New Brunswick Department of Health and Social Services will hold their annual meeting under the direction of Dr. J. A. Melanson, Chief Medical Officer.

Nova Scotia

The School of Nursing, Dalhousie University, conducted an institute on "Nursing Aspects in Tuberculosis Control" for the Atlantic provinces, February 27 to March 1. The conference leader was Miss Madge McKillop, B.N., Reg.N., Director of Nursing, Royal Edward Laurentian Hospital, Montreal. Thirty-one provincial public health nurses were in attendance.

Miss Hilda Orechia, Reg.N., and Mrs. Isobel Macdonald joined the staff of the Department on February 4. Their headquarters will be in Windsor and Ingonish Ferry respectively.

NOEL R. RAWSON, O.B.E., M.B., B.S., D.P.H.

The Manitoba Department of Health and Public Welfare regrets to record the passing of Dr. Noel R. Rawson, who was active in public health in the province for many years. At the time of his death he was Acting Medical Director of the Red River Health Unit.

Dr. Rawson joined the department in 1932 as an epidemiologist and, except for a period in the armed forces during the last war, in which he distinguished himself in quelling a typhoid epidemic among Canadian Eskimos, he remained almost continually in public health work.

Books and Reports

MEDICAL ASPECTS OF TRAFFIC ACCIDENTS, Harold Elliott, M.D. Published by the Traffic Accident Foundation for Medical Research, Montreal. 514 pages. $7.00 (plus 25¢ postage) from the office of the Foundation, 218 Sun Life Building, Montreal.

Dr. Harold Elliott of the Montreal General Hospital, a prominent neurological surgeon, stimulated interest in study of the medical aspects of the traffic accident problem. His interest resulted in an international conference held in Montreal in May, 1955, and subsequently, to the organization of the Traffic Accident Foundation for Medical Research with headquarters in Montreal. Public health workers are indebted to Dr. Elliott for the publication of the findings of the first conference and for the outstanding leadership he has given to the study of this urgent problem. Chapter headings include: General Statistical Data, Pre-school and School Children in Traffic Accidents, Traffic Accidents in Industry, Auto Crash Injury Research, Alcohol and Traffic Accidents, Neurological Disorders and Driving, Behaviour Defects, Ocular Implications, Emergency Care, Screening Clinics, Community Organizations and Education.

SCHOOL OF NURSING, THE HAMILTON GENERAL HOSPITAL, 1890–1955, Marjorie Freeman Campbell. Published by the Ryerson Press, Toronto. 1956. 172 pages. $4.50.,

An interesting and entertaining account, not only of the history of the School of Nursing of the Hamilton General Hospital, but of the hospital itself, now the third largest in Canada. This is the story of nurse training over 65 years as seen through the eyes of its nurses. Enlivened with 65 years of hospital anecdotes, this book is a valuable contribution to the small number of historical outlines in Canadian medicine and public health.

DIAGNOSTIC PROCEDURES FOR VIRUS AND RICKETTSIAL DISEASES, Thomas Francis, Jr., M.D., Joseph E. Smadel, M.D., Editors. American Public Health Association Inc., 1790 Broadway, New York 19, N.Y. 1956. 596 pp. $7.50.

Each chapter of this authoritative volume, first published in 1948, has been completely rewritten. There is a new chapter on General Principles bearing directly on applied techniques and the correlation of methods and techniques. New chapters are also presented on tissue culture methods and on the Coxsackie viruses. Medical officers of health as well as laboratory personnel will consider this reference book as one of the essential volumes. The American Public Health Association is to be thanked for making possible this book and the editors, Dr. Francis and Dr. Smadel, for their outstanding service.

THE STRESS OF LIFE, Hans Selye, M.D., Director of the Institute of Experimental Medicine and Surgery, University of Montreal. Published by McGraw-Hill Company of Canada, Ltd., 1956. 324 pp. $7.15.

Dr. Selye, internationally known in endocrinology, has published five books during the past six years as annual reports of his studies on "Stress". In this volume he presents, for the general reader, the "general adaptation syndrome—G.A.S." He recommends that the general reader should preface his reading with Book V in which are presented the practical indications of the stress concept in everyday life. Physicians and others familiar with problems in medicine will find in this book a comprehensive presentation of this intriguing subject.